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URBAN AND RURAL NEW ENGLAND.

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For some time interest has been growing in the problem presented by the decay of the rural towns in New England, and numerous articles have been written upon it. There is, however, a singular absence of accurate statistical information upon the subject; and it is to state facts, rather than to propose remedies, that this article is written. It is generally understood that the small towns have been losing in population during recent years; but how great has been the loss, or from what decade it dates, is not so well known. No scientific discussion of the subject can be carried on, and no remedies proposed, until such study has been made.

There had been considerable manufacture on a small scale in New England during the eighteenth century. The colonies had largely imported manufactured articles, and exported raw materials. In 1807 the imports amounted to $138,500,000 and the exports to over $108,000,000. Then came the Embargo Act, and our imports fell to $57,000,000 and exports to $22,400,000 in one year. This prohibition of foreign trade necessitated the home manufacture of goods, and from this period dates the rapid growth of our industries.* The manufacturing towns grew rapidly, but the

*F. W. Taussig, "The Tariff History of the United States," 4th edition, pp. 16, 17.

country districts were prosperous with their small mills and agriculture. Before the Erie Canal was opened, there was little competition in the raising of cereals, for grain could not be transported more than a hundred miles by wagon without losing its value.

There may have been as many of the young men and women who left the country towns for the cities at this period as there are at present; but the size of families was so much greater that several sons or daughters could go to the city to make a fortune, and the old place be kept in the family and carried on to a profit by some member who considered it a privilege to inherit it. But about 1850 there came a change. The discovery of gold in California enticed many to try their fortune in this land of promise. The prairies of the Central West began to be settled, and sometimes a large party would leave a small town in New England to settle in the new country. The new town would then bear the name of the old one they had left. Then, too, there came the building of the railroads; and, as these pushed westward, they brought grain to the cities of the East, which undersold the product of the New England farms. As the cattle appeared on the vast ranges of the West, they left the pastures of the hill towns in the East. The small industries, which had in many cases made the country towns prosperous, were now moved to the larger cities, where there were better means of communication, a larger supply of labor, and the economies that go with combination. As a result of these varied causes, the country towns declined; and the young men and women went in large numbers either to the cities or to the farms of the West.

Two different tasks are attempted in this paper: first, to determine the relative rates of increase, since 1850, of the places of different sizes in New England; and, secondly, to see if, at present, the constitution of the population is different in the cities from that in the country districts.

It was decided to group the population under six heads,—

places with a population greater than 100,000, 50,000 to 100,000, 25,000 to 50,000, 10,000 to 25,000, 4,000 to 10,000, and under 4,000. It would have been a comparatively easy matter to find out from the successive censuses the numbers living in places of these different sizes; but it was felt that the value of the study would be increased if a list was made of the places under each head in 1900, and the growth of the groups thus composed was traced from 1850. The same places would thus be grouped together all the way. A difficulty was soon encountered. Towns have been set off from others in some cases, and in a very few two or three have been drawn upon to form a new one. Where these places fell within the same group in 1900, no rearrangement was necessary; but where, for example, one place fell within the group of cities between 10,000 and 25,000, and the other within the group between 4,000 and 10,000, it was decided to include both within the former head. The only alternative would have been to determine the population on the territory which had been set off at the censuses prior to the date of division, and this was impossible. Therefore, the distribution of the population of 1900 in the tables showing growth is not exactly the same as in the tables showing static conditions; but, as these sets of tables are not used for purposes of comparison, the difference will cause no error in the results.

TABLE I.*

GROWTH OF POPULATION OF NEW ENGLAND BY DECADES.

	1900.	1890.	1880.	1870.	1860.	1850.
New England	5,592,017	4,700,745	4,010,529	3,487,924	3,135,283	2,728,116
Places over 100,000 in 1900	1,067,800	825,721	637,830	456,141	306,759	227,312
50,000 to 100,000 " "	813,188	589,018	433,096	326,057	244,036	163,885
25,000 to 50,000 " "	500,353	381,847	266,487	188,476	138,196	93,992
10,000 to 25,000 " "	897,306	712,793	540,678	444,162	358,173	272,836
4,000 to 10,000 " "	773,666	675,687	573,375	488,157	420,641	363,850
Places under 4,000 " "	1,539,704	1,515,679	1,559,063	1,654,931	1,667,478	1,606,241

*All the tables given in this article have been formed from figures in a United States Census. When abbreviations are given, M. stands for male, F. for female, and T. for the total of the two sexes.

In Table I. we have the growth of the population since 1850. If we take, for example, the numbers in 1900 in cities from 50,000 to 100,000, we have 813,188. Taking the corresponding number for 1850, we must not infer that there were 163,885 living in cities which were at that time between 50,000 and 100,000 in size, but that the area which contained 813,188 people in 1900 held 163,885 in 1850. The towns under 4,000 contained 27.5 per cent. of the total population in 1900; while in 1850 these same towns held 58.8 per cent. of the inhabitants. While the population of the small towns had fallen from 1,606,241 to 1,539,704, that of the rest of the States had increased from 1,121,875 to 4,052,313.

TABLE II.

COMPARATIVE GROWTH OF THE POPULATION BY DECADES.

	1900.	1890.	1880.	1870.	1860.	1850.
New England	205.0	172.3	147.0	127.9	114.9	100.0
Cities over 100,000 in 1900	469.8	363.3	280.6	200.7	134.9	100.0
50,000 to 100,000 " "	496.2	359.4	264.4	199.0	148.9	100.0
25,000 to 50,000 " "	532.4	406.3	283.6	200.6	147.0	100.0
10,000 to 25,000 " "	328.9	261.3	198.2	162.8	131.3	100.0
4,000 to 10,000 " "	212.7	185.7	157.6	134.2	115.6	100.0
Places under 4,000 " "	95.9	94.4	97.1	98.7	103.8	100.0

These changes are made more apparent by a study of Table II., which gives the growth of the population from 1850 to 1900. In this case the numbers in 1850 are reduced to the base of 100. During the entire period the total population has a little more than doubled. The size of the cities over 25,000 is about five times what it was fifty years ago, places from 10,000 to 25,000 about three times, from 4,000 to 10,000 about twice as large, while the towns under 4,000 have not held their own. There appears to be some connection between the size of cities and their rate of increase. This increase is of course intensified by the fact that

only cities of rapid growth have been included in the upper classes; and, if the cities had been grouped according to their population in 1850, the same results would not have been obtained. This exceptional growth of the larger cities has been due, principally, to the factory system. The more purely manufacturing cities over 25,000 have increased from 136,402 to 782,519 during the past five decades.* This gives a comparative growth from 100 to 573.5. The population of the other cities in the same groups has grown from 100 to but 458.4. We can thus see the effect of manufacture in hastening this growth.

TABLE III.

PERCENTILE GROWTH OF POPULATION BY DECADES.

	1890-1900.	1880-90.	1870-80.	1860-70.	1850-60.
New England	19.0	17.2	15.0	11.3	14.9
Places over 100,000 in 1900 .	29.3	29.5	39.8	48.7	34.9
50,000 to 100,000 " " .	38.1	36.0	32.8	33.6	48.9
25,000 to 50,000 " " .	31.0	43.3	41.4	36.4	47.0
10,000 to 25,000 " " .	25.9	31.8	21.7	24.0	31.3
4,000 to 10,000 " " .	14.5	17.8	17.5	16.1	15.6
Places under 4,000 " " .	1.6	2.8†	1.6†	4.9†	3.8

The increase by decades is shown more clearly by Table III. With the single exception of the period during the Civil War there has been a constantly increasing rate of growth. In the decades ending in 1860 and 1900 it was most rapid for cities from 50,000 to 100,000; in 1870, for cities over 100,000; in 1880 and 1890, for cities from 25,000 to 50,000. It seems remarkable that the most rapid rate of increase for cities over 100,000 should have been from 1860 to 1870. In fact, the growth of Worcester and Fall River during this

*These cities are Manchester, N.H.; Fall River, Haverhill, Holyoke, Lawrence, Lowell, Lynn, New Bedford, and Taunton, Mass.; Bridgeport, Meriden, New Britain, and Waterbury, Conn.; and Pawtucket, R.I.

†Decrease.

decade was over 74 per cent. Places from 4,000 to 10,000 barely maintained the rate of growth of the preceding decade, while for all of the others there was a decided loss. Places between 25,000 and 100,000 grew most rapidly in the decade ending 1860, while those between 4,000 and 25,000 had their maximum from 1880 to 1890. The small towns grew most rapidly before 1860; and since then, with the exception of a slight increase since 1890, there has been a steady decrease. In fact there were over 100,000 more people in these same country towns in 1860 than there are at present. We see from this that the rural depopulation constitutes a real problem.

The remainder of the article will be devoted to the study of the composition of the population of New England at the present day, in order to determine if there are any decided distinctions between the country towns and the cities of different size.

CLASSIFICATION BY SEX OF THE TOTAL POPULATION IN 1900.

	Actual Numbers.			On Base of 1,000.		
	Total.	Male.	Female.	Total.	Male.	Female
New England . . .	5,592,017	2,763,796	2,828,221	1,000.0	494.3	505.7
Cities over 100,000 . .	1,067,800	523,178	544,622	191.0	93.6	97.4
50,000 to 100,000 . . .	762,049	368,138	393,911	136.3	65.8	70.5
25,000 to 50,000 . . .	488,209	237,701	250,508	87.4	42.5	44.9
10,000 to 25,000 . . .	832,700	402,797	429,903	149.1	72.2	76.9
4,000 to 10,000	825,864	405,004	420,860	147.7	72.4	75.3
Places under 4,000 . .	1,615,395	826,978	788,417	288.5	147.8	140.7

There are 64,425 more females than males in New England. In the places over 4,000 there is an excess of females amounting to 102,986, but in the country districts the males predominate to the number of 38,561. For the entire area there are 494.3 males to 505.7 females, but in the groups of places over 4,000 the males are never more than 490.4

to 1,000 of total population. In the places under 4,000 there are, however, 512.0 males to 488.0 females. This excess of females in the cities is due to a variety of causes. The greater rate of mortality among males would naturally tend to reduce their numbers. This cause would also act in the country districts, but the more hazardous occupations in which men engage are usually found in the cities. In the cities of the registration area the death-rate for males in 1900 was 2.3 per 1,000 higher than for females, while in the rural districts the excess for males was but 0.8 per 1,000.* The opportunities for employment in the country are principally open to men. Women are more dependent upon their friends than men, and therefore do not take kindly to the life of a servant in a small town. The occupations which are open to women are, as a rule, to be found in the cities. Those places which have kept their manufactures have grown so that they now contain more than 4,000 inhabitants, while the rural districts have lost in numbers. The women in search of work have therefore left the small towns and gone to the neighboring cities. Women are great migrants for a short distance, but do not take long journeys to get employment.

CLASSIFICATION BY SEX OF THE NATIVE-BORN POPULATION IN 1900.

	Actual Numbers.			On Base of 1,000.		
	Total.	Male.	Female.	Total.	Male.	Female.
New England . . .	4,146,780	2,048,171	2,098,609	1,000.0	493.9	506.1
Places over 100,000 . .	696,320	343,993	352,327	168.0	83.0	85.0
50,000 to 100,000 . . .	506,417	246,320	260,097	122.1	59 4	62.7
25,000 to 50,000	330,497	160,825	169,672	79.7	38.8	40.9
10,000 to 25,000	604,328	291,451	312,877	145.8	70.3	75.5
4,000 to 10,000	623,434	303,812	319,622	150.3	73.2	77.1
Places under 4,000 . .	1,385,784	701,770	684,014	334.1	169.2	164.9

* Twelfth Census of the United States, vol. iii. p. lxiv.

Among the native-born there are almost exactly 50,000 more females than males; and the relation between the sexes is 493.9 to 506.1,—a slightly greater excess of females than in the total population. The females outnumber the males in all the groups over 4,000, but in the small towns the males predominate.

CLASSIFICATION BY SEX OF THE FOREIGN-BORN POPULATION IN 1900.

	Actual Numbers.			On Base of 1,000.		
	Total.	Male.	Female.	Total.	Male.	Female.
New England . . .	1,445,237	715,625	729,612	1,000.0	495.1	504.9
Places over 100,000 . .	371,480	179,185	192,295	257.1	124.0	133.1
50,000 to 100,000 . . .	255,632	121,818	133,814	176.9	84.3	92.6
25,000 to 50,000	157,712	76,876	80,836	109.1	53.2	55.9
10,000 to 25,000	228,372	111,346	117,026	158.0	77.0	81.0
4,000 to 10,000	202,430	101,192	101,238	140.1	70.0	70.1
Places under 4,000 . .	229,611	125,208	104,403	158.8	86.6	72.2

We might expect to find that among the foreign-born the males would lead, but this is not the case. There are 14,000 more females among this class; but the numbers are more nearly equal than with the native-born,—495.1 to 504.9. Throughout most of the country, among the foreign-born, the males are in excess; but in New England peculiar conditions have prevailed. When the people of a country begin to migrate, the single men or married men without their families are the first to leave. Later the wives go to join their husbands, and finally single women often go to take places which have been assured them. These young women do not leave until there is a colony of their friends or relatives in some place in the new world. New England has more of the Irish than of any other nationality. They began to come in large numbers before 1850, and since 1870 the women have arrived to take employment as servants or in the factories. At present a woman with a knowledge

of English has perhaps a better chance to obtain immediate employment than a man. The demand for servants is continually greater than the supply. The building of steam railroads in New England was largely completed two decades ago, and there is not the demand for male labor in this line which formerly existed. Agriculture has not been very profitable; and the farm hands have gone farther west, some, like the Scandinavians, to take up new land, others to work by the month. The textile industries of Eastern New England have furnished employment to thousands of foreign-born women. Less than one-sixth of the foreign-born are in the country districts, while more than a third of the native-born are in places under 4,000.

CLASSIFICATION BY SEX OF THE NATIVE WHITES OF NATIVE PARENTS IN 1900.

	Actual Numbers.			On Base of 1,000.		
	Total.	Male.	Female.	Total.	Male.	Female.
New England . . .	2,511,110	1,243,718	1,267,392	1,000.0	495.4	504.6
Places over 100,000 . .	288,562	143,314	145,248	114.9	57.1	57.8
50,000 to 100,000 . . .	247,709	120,774	126,935	98.6	48.1	50.5
25,000 to 50,000	160,758	78,336	82,422	64.0	31.2	32.8
10,000 to 25,000	335,064	161,129	173,935	133.5	64.2	69.3
4,000 to 10,000	386,856	188,181	198,675	154.1	75.0	79.1
Places under 4,000 . .	1,092,161	551,984	540,177	434.9	219.8	215.1

Equality between the sexes is more nearly reached among the native whites of native parents than in any other group. The numbers per thousand are 495.4 and 504.6. The reason is, as in all cases there are more females in places over 4,000, and more males in the small towns, that 43 per cent. of this class are in the country districts. They do not furnish their share of the population in the places over 10,000, but below this line they furnish a greater proportion than any other class.

CLASSIFICATION BY SEX OF THE NATIVE WHITES OF FOREIGN PARENTS IN 1900.

	Actual Numbers.			On Base of 1,000.		
	Total.	Male.	Female.	Total.	Male.	Female.
New England . . .	1,579,044	777,143	801,901	1,000.0	492.1	507.9
Places over 100,000 . .	388,325	191,140	197,185	246.0	121.1	124.9
50,000 to 100,000 . . .	248,651	120,815	127,836	157.5	76.5	81.0
25,000 to 50,000	166,308	80,895	85,413	105.4	51.3	54.1
10,000 to 25,000	260,976	126,500	134,476	165.4	80.2	85.2
4,000 to 10,000	231,198	113,154	118,044	146.4	71.7	74.7
Places under 4,000 . .	283,586	144,639	138,947	179.3	91.3	88.0

The native whites of foreign parents show the greatest disparity between the sexes of any class which has been studied, the males furnishing but 492.1 in 1,000. About a fourth of this class are found in cities over 100,000, whereas among those of native parents less than one-eighth are in these large cities. But in places under 4,000 the males lead.

CLASSIFICATION BY SEX OF THE NEGROES IN 1900.

	Actual Numbers.			On Base of 1,000.		
	Total.	Male.	Female.	Total.	Male.	Female.
New England . . .	59,099	28,579	30,520	1,000.0	483.6	516.4
Places over 100,000 . .	20,723	10,167	10,556	350.6	172.0	178.6
50,000 to 100,000 . . .	11,096	5,261	5,835	187.7	89.0	98.7
25,000 to 50,000	3,728	1,748	1,980	63.1	29.6	33.5
10,000 to 25,000	8,567	3,943	4,624	145.0	66.7	78.3
4,000 to 10,000	5,337	2,504	2,833	90.3	42.4	47.9
Places under 4,000 . .	9,648	4,956	4,692	163.3	83.9	79.4

It is among the negroes that we note the greatest difference. Here we find only 483.6 males to 516.4 females. The reason for this is that they are largely confined to the cities. Over 53 per cent. of the negroes are in cities over 50,000, and less than a sixth of them in the country.

Whether any class in the population has a large or small proportion of males seems to depend upon the percentage of that class which lives in the cities. City life, and that especially in places where the textile industry prevails, attracts women; and, if we have given the proportion of the population living in cities, we can make a good estimate of the relative numbers of the sexes. The labor of women is becoming increasingly mobile, and follows the demand for it. It does not appear to have been common that the supply of female labor in any place has determined the establishment of industry. A growing business has furnished demand, and migration the supply.

TABLE IV.

CLASSIFICATION OF POPULATION IN 1900 BY SEX AND NATIONALITY ON BASE OF 1,000.

		New England.	Places over 100,000.	50,000 to 100,000.	25,000 to 50,000.	10,000 to 25,000.	4,000 to 10,000.	Places under 4,000.
Total population	T.	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
	M.	494.3	490.0	483.1	486.9	483.7	490.4	512.0
	F.	505.7	510.0	516.9	513.1	516.3	509.6	488.0
Native-born	T.	741.6	652.1	664.5	676.9	725.9	754.9	857.9
	M.	366.2	322.2	323.2	329.3	350.1	367.9	434.5
	F.	375.4	329.9	341.3	347.6	375.8	387.0	423.4
Foreign-born	T.	258.4	347.9	335.5	323.1	274.1	245.1	142.1
	M.	127.9	167.8	159.9	157.5	133.6	122.5	77.5
	F.	130.5	180.1	175.6	165.6	140.5	122.6	64.6
Native whites	T.	449.1	270.2	325.0	329.3	402.4	468.5	676.1
Native parents	M.	222.5	134.2	158.5	160.5	193.5	227.9	341.7
	F.	226.6	136.0	166.5	168.8	208.9	240.6	334.4
Native whites	T.	282.4	363.7	326.2	340.7	313.4	280.0	175.6
Foreign parents	M.	139.0	179.0	158.5	165.7	151.9	137.1	89.6
	F.	143.4	184.7	167.7	175.0	161.5	142.9	86.0
Negro	T.	10.6	19.4	14.6	7.7	10.3	6.4	6.0
	M.	5.1	9.5	6.9	3.6	4.7	3.0	3.1
	F.	5.5	9.9	7.7	4.1	5.6	3.4	2.9

Nationality (Table IV.).—74 per cent. of the population is native-born, and 26 per cent. foreign-born. This gives a ratio of about 3 to 1, whereas for the whole country it is

roughly 7 to 1. There is but one State in the Union, North Dakota, with a percentage of foreign-born inhabitants larger than that of Massachusetts and Rhode Island. Over a third of the population of the cities over 25,000 is foreign-born. It is a remarkable fact that the proportion of the foreign-born, commencing with 14.2 per cent. in the country towns, increases with each increase in the size of cities; while the converse of this holds for the native-born. This shows to a peculiar degree the attraction of the large city for the foreigner. It is in the large cities that the best opportunities for unskilled help are to be found; and there, too, are the aggregations of his own nationality, where he feels most at home. This probably holds true for the Russians, Italians, Greeks, and Chinese more than for any other races. In the cities over 25,000 the native whites of foreign parents greatly outnumber the native whites of native parents, while in the places under 4,000 the latter class is nearly four times as numerous as the former. With the single exception of the cities between 50,000 and 100,000 the ratio of the native whites of foreign parents steadily increases with the size of cities. The negroes concentrated in the large cities form the greatest of any class. Over 35 per cent. of them are in cities over 100,000. In the cities over 50,000 their proportion surpasses all others, while in places under 10,000 they have the smallest percentage of any class. In the cities over 25,000, 41.5 per cent. of the total population is found, while for negroes 60.1 per cent., foreign-born 54.3 per cent., native whites of foreign parents 51.0 per cent., native-born 37.0 per cent., and native whites of native parents only 27.7 per cent. This seems to show that there is a steady migration from the country to the cities. Those possessing little property and coming from a distance, like the foreign-born and negroes, find their way there at once. The children of the foreign-born stay in the cities where they are born; while the native whites of native parents, born in the country and kept there by the property they hold, gravitate less to

the cities. Although the foreigner goes to the small town in some instances, he has not yet done so in sufficient numbers to repair the drain.

Age.—When we come to the distribution of the population by age groups, it is impossible to distinguish between the places of different size under 25,000, so that these have been grouped under one head. But above this the same classification has been preserved, and these groups are sufficient to enable us to trace numerous distinctions. The various classes have been divided into four age groups: under 15, from 15 to 35, from 35 to 65, and over 65. There remains a number with age unknown, but it is comparatively small. It was thought best in this division of the subject to introduce only the tables of percentages, as these are much better for purposes of comparison than those giving the actual numbers in each group.

TABLE V.

TOTAL POPULATION IN 1900 CLASSIFIED BY SEX AND AGE ON BASE OF 1,000.

		All Ages.	Under 15.	15 to 35.	35 to 65.	Over 65.	Age unknown.
New England	T.	1,000.0	274.1	360.4	303.9	58.9	2.7
	M.	494.3	137.4	177.0	150.9	27.2	1.8
	F.	505.7	136.7	183.4	153.0	31.7	0.9
Cities over 100,000	T.	1,000.0	274.8	389.6	295.4	36.9	3.3
	M.	490.0	137.5	189.0	145.7	15.5	2.3
	F.	510.0	137.3	200.6	149.7	21.4	1.0
50,000 to 100,000	T.	1,000.0	271.3	389.3	294.5	41.9	3.0
	M.	483.1	135.2	186.7	141.7	17.5	2.0
	F.	516.9	136.1	202.6	152.8	24.4	1.0
25,000 to 50,000	T.	1,000.0	291.9	378.7	286.0	40.9	2.5
	M.	486.9	145.2	182.2	140.5	17.4	1.6
	F.	513.1	146.7	196.5	145.5	23.5	0.9
Places under 25,000	T.	1,000.0	272.1	341.4	311.5	72.5	2.5
	M.	499.4	136.8	170.1	156.3	34.5	1.7
	F.	500.6	135.3	171.3	155.2	33.0	0.8

Turning to the total population (Table V.), we find that almost exactly two-thirds are between 15 and 65 years of age, leaving at least one-third who by reason of their years

are unable to support themselves. For those under 15 years there seems to be but small difference except in cities from 25,000 to 50,000, where they are most numerous. From Table IV. we see that there is a particularly large proportion of native whites of foreign parents in these cities; and, since they are very largely in the early age groups, this would account for the great number of children. But, when we come to the productive age groups from 15 to 65, there are marked differences. In the largest cities there are the most to be found, and the number regularly decreases until we come to the smallest towns. The number per 1,000 for cities over 100,000 is 685.0; from 50,000 to 100,000, 683.8; from 25,000 to 50,000, 664.7; and, under 25,000, 652.9. The number between 15 and 35 is particularly small in the country districts, probably due to the fact that many of the youth have gone to the cities to complete an education. To many, city life seems to offer varied advantages that cannot be obtained in the country. Young women go to the cities for employment as stenographers or book-keepers; while the young men see that the great prizes in business are in the large cities, and hope that they may obtain one. When we come to the groups over 65 years, we find that nearly twice as many per 1,000 are in the small places as in the cities over 100,000. If we could obtain the figures for the places under 4,000 alone, it is probable that the distinction would be even more marked. The reasons for this difference are apparent. Even if the death-rates in the city and country were equal, we should have proportionately fewer in the older age groups in the city; for the population there is largely recruited by immigration, and these new arrivals are generally between 15 and 40. The higher birth-rate in the cities intensifies this. Then, too, many who have spent the more active years of life in the city, go to the country for their declining years.

The number of males and females under 15 years is nearly equal, and there are but slight differences in this respect be-

tween the cities of various sizes. This is because migration does not affect the children to any great extent, and the births are divided very nearly equally between the sexes. After 15 there is no case where the males equal the females in numbers except between 35 and 65 in the places under 25,000. If we had the places under 4,000 separated from the others, we should doubtless find in all age groups, except that over 65, a majority of males in these small towns.

TABLE VI.

NATIVE-BORN POPULATION IN 1900 CLASSIFIED BY SEX AND AGE ON BASE OF 1,000.

		All Ages.	Under 15.	15 to 35.	35 to 65.	Over 65.	Age unknown.
New England	T.	1,000.0	345.5	331.3	262.8	57.9	2.5
	M.	493.9	173.3	163.2	129.1	26.6	1.7
	F.	506.1	172.2	168.1	133.7	31.3	0.8
Cities over 100,000	T.	1,000.0	387.0	358.4	221.4	29.2	4.0
	M.	494.0	193.7	177.1	108.3	12.0	2.9
	F.	506.0	193.3	181.3	113.1	17.2	1.1
50,000 to 100,000	T.	1,000.0	372.2	348.0	238.4	38.0	3.4
	M.	486.4	185.9	169.7	112.8	15.6	2.4
	F.	513.6	186.3	178.3	125.6	22.4	1.0
25,000 to 50,000	T.	1,000.0	397.0	335.6	228.2	36.8	2.4
	M.	486.5	197.7	162.2	109.7	15.5	1.4
	F.	513.5	199.3	173.4	118.5	21.3	1.0
Places under 25,000	T.	1,000.0	322.7	320.2	283.1	72.0	2.0
	M.	496.3	162.3	158.5	140.3	33.9	1.3
	F.	503.7	160.4	161.7	142.8	38.1	0.7

In the native-born (Table VI.) we have a population which has been affected only indirectly by foreign immigration, and the distribution of the population has been brought about more by birth and death rates. We can thus see whether economic and social forces tend to affect the age classification of the cities of different sizes. Under 15 years there are 34.5 per cent. of this portion of the population, while only 27.4 per cent. of the total population is in the same age group. Two-thirds of the total population are between 15 and 65 years, while less than three-fifths

of the native-born fall within the same group. The proportion over 65 varies but little. When we compare the various groups of native-born under 15 by size of city, we find grave differences. In no case are there within 5 per cent. as many children in places under 25,000 as in any group over this, and in one case the figure is as high as 7.5 per cent. This is partially due to the lower birth-rate in the country, partially to the presence of more old persons which reduces the proportion of the young, and in part to the fact that, when children get to be from 10 to 12 years of age, they are often taken to the city to be educated. Economic forces cannot act upon a class at this early age. From 15 to 35 there are proportionately fewer in the small than the large places. In fact, as the size of city increases, so does the proportion within this active age group increase in regular order. This is the result of migration. The young men and women go to the cities to enjoy the greater social, educational, and business opportunities which are there offered. When we pass the 35th year, we meet with a change. In the succeeding group there are about 5 per cent. more in the small than in the large places. As the cities are recruited not only by a high birth-rate, but by the migration of the youth from the country, we should expect that there would be relatively fewer in the higher age groups than in the country districts where causes opposed to these are at work. Then, too, the higher death-rate of the cities reduces the numbers in this group. The effect of greater mortality is more noticeable in the highest age group, including those over 65. We find the representatives of this group twice as numerous in the places under 25,000 as in those over this number. This is largely, as before stated, traceable to the high death-rate of the cities; but there is also the tendency to retire to the old home in the country for the remaining years of life.

Under 15 there are more boys than girls. This is due solely to the proportion between the sexes at birth; for, with

the exception of a very few years after 20, the death-rate of males is always higher than that for females. From this age forward there is always a majority of females. It is unfortunate that we could not separate the places under 4,000, but it was impossible to do so. Had this been done, we should probably have found the males outnumbering the females in all age groups under 65. Above this age the females might have led, but it is entirely problematical.

TABLE VII.

FOREIGN-BORN POPULATION IN 1900 CLASSIFIED BY SEX AND AGE ON BASE OF 1,000.

		All Ages.	Under 15.	15 to 35.	35 to 65.	Over 65.	Age unknown.
New England	T.	1,000.0	69.5	444.2	421.6	61.5	3.2
	M.	495.1	34.4	216.5	213.4	28.7	2.1
	F.	504.9	35.1	227.7	208.2	32.8	1.1
Places over 100,000	T.	1,000.0	64.4	448.4	434.3	51.3	1.6
	M.	482.3	32.1	211.3	216.0	22.0	0.9
	F.	517.7	32.3	237.1	218.3	29.3	0.7
50,000 to 100,000	T.	1,000.0	71.3	471.2	405.5	49.8	2.2
	M.	476.5	34.7	220.6	198.8	21.3	1.1
	F.	523.5	36.6	250.6	206.7	28.5	1.1
25,000 to 50,000	T.	1,000.0	71.4	468.9	407.3	49.6	2.8
	M.	487.4	35.0	224.1	205.0	21.3	2.0
	F.	512.6	36.4	244.8	202.3	28.3	0.8
Places under 25,000	T.	1,000.0	71.3	425.4	424.1	74.8	4.4
	M.	511.4	35.5	216.1	219.6	37.1	3.1
	F.	488.6	35.8	209.3	204.5	37.7	1.3

Turning to the foreign-born (Table VII.), we are confronted with entirely different conditions. Among the native-born over a third of the population is under 15, while with the immigrants less than one-fourteenth is in this age group. 86.6 per cent. of the foreign-born are between 15 and 65, compared to 59.4 per cent. of the native-born. The proportionate numbers over 65 years are about equal for the two classes, with the foreign-born slightly in the lead. Nothing should be concluded from this last statement as to the relative mortality of the two groups, for with the small

number of children among the foreign-born there would of necessity be more in the higher age groups. But, on the other hand, the foreigners have been coming to New England in continually increasing numbers of late; and it is too early for many of the Italians and Russians to have reached this advanced age. They are quite largely in the age group between 35 and 65. It is never safe, without the classification of a group, to draw conclusions as to the rate of mortality. And, in fact, the crude death-rate of two groups serves as a poor criterion of their relative healthiness, unless the age classification is similar.

The smallest number of children among the foreign-born is found in the cities over 100,000. This is due to the fact that the single men and women are more common in the large centres. The reason for this is found in the crowding of the late comers into the foreign quarters of the large cities. These latest arrivals, as is always the case when a nation is beginning to emigrate, are more often single. Therefore, the number of children is small. From 15 to 35 the opposite is the case, and of this group there are more in the large than in the small places. This class is composed of the more recent immigrants who have come to the large centres, where numbers of the same nationality have already settled. Between the ages of 35 and 65 we find a peculiar distribution. In the cities between 25,000 and 100,000 there are comparatively few of this age group. The reason for this is not apparent on the surface, but is most likely the following. Before 1880 the immigrants settled principally in the few largest cities. Since then they have also come to the other cities of considerable size. A glance at the table will show that the numbers between 15 and 35 in the cities between 25,000 and 100,000 is higher than in any other groups, and between 35 and 65 is lower than any others. These immigrants have not been in the country long enough to swell the numbers in the higher age groups. This same reasoning applies to the group over 65. The large numbers

found in the small places in the two upper age groups is due to different causes. It takes some time for an immigrant to save up enough money to buy a farm, and in a great many cases he stays in the city to work for several years before he buys his little place in the country. Thus the higher age group would be found better represented in the small towns. Then, too, life for a single person is not so attractive in the country as in the city. Opportunities for domestic service and work in the factories attract the young to the cities. The higher death-rate of the cities also tends to reduce the numbers of the old.

There are more females than males under 15, regardless of the size of place. Between 15 and 35 there are more females except in places under 25,000. The foreigners under 35 are not often held to any place by ties of property, and are therefore free to follow their choice in selecting their place of residence. Social affinity, as among the Jews, may decide the question; but it is generally a purely economic motive. It is, therefore, interesting to note that in this active age group the males are more common in the country, and the females in the city. This is almost wholly due to the fact that it is in the cities that the women find employment best suited to their tastes and capabilities. The farms offer work to the men. Between 35 and 65 there are more males than females. But in the cities over 50,000 the females are in the majority. The great disparity lies in the places under 25,000, where the males are far more numerous. In the age group over 65 there are more females than males in every case, although in the group of smallest places the difference is not appreciable. The predominance of females in this highest age group is due almost entirely to the higher mortality among males.

TABLE VIII.

TOTAL POPULATION IN 1900 CLASSIFIED BY SEX, AGE, AND NATIVITY ON BASE OF 1,000.

		All Ages.	Under 15.	15 to 35.	35 to 65.	Over 65.	Age unknown.
Total Population:							
New England	T.	1,000.0	274.1	360.4	303.9	58.9	2.7
	M.	494.3	137.4	177.0	150.9	27.2	1.8
	F.	505.7	136.7	183.4	153.0	31.7	0.9
Places over 25,000	T.	414.5	114.9	160.5	121.5	16.4	1.2
	M.	201.9	57.4	77.4	59.4	6.9	0.8
	F.	212.6	57.5	83.1	62.1	9.5	0.4
Places under 25,000	T.	585.5	159.2	199.9	182.4	42.5	1.5
	M.	292.4	80.0	99.6	91.5	20.3	1.0
	F.	293.1	79.2	100.3	90.9	22.2	0.5
Native-born:							
New England	T.	741.6	256.3	245.6	194.9	42.9	1.9
	M.	366.2	128.5	121.0	95.7	19.7	1.3
	F.	375.4	127.8	124.6	99.2	23.2	0.6
Places over 25,000	T.	274.3	105.5	96.0	62.6	9.2	1.0
	M.	134.3	52.7	47.0	30.1	3.8	0.7
	F.	140.0	52.8	49.0	32.5	5.4	0.3
Places under 25,000	T.	467.3	150.8	149.6	132.3	33.7	0.9
	M.	231.9	75.8	74.0	65.6	15.9	0.6
	F.	235.4	75.0	75.6	66.7	17.8	0.3
Foreign-born:							
New England	T.	258.4	17.8	114.8	109.0	16.0	0.8
	M.	128.1	8.9	56.0	55.2	7.5	0.5
	F.	130.3	8.9	58.8	53.8	8.5	0.3
Places over 25,000	T.	140.2	9.4	64.5	58.9	7.2	0.2
	M.	67.6	4.7	30.4	29.3	3.1	0.1
	F.	72.6	4.7	34.1	29.6	4.1	0.1
Places under 25,000	T.	118.2	8.4	50.3	50.1	8.8	0.6
	M.	60.5	4.2	25.6	25.9	4.4	0.4
	F.	57.7	4.2	24.7	24.2	4.4	0.2

Table VIII. has been introduced in order to show at a glance how the population is divided by sex, age, and nativity with a base of 1,000. Thus it is possible to tell the number of males among the foreign-born between the ages of 15 and 35 in places under 25,000. In order to reduce the size of the table without greatly impairing its value, the cities over 25,000 have been included under one head. In the total population there are proportionately about 40 per cent. more children in the places under 25,000 than in those over

that number. Yet, when we take the age group over 65, the places of smaller size lead by about 150 per cent. So, too, with the native-born. Under 15 years they are scarcely 50 per cent. more numerous in the smaller places, but the disparity gradually increases until, over 65, there are nearly 300 per cent. more in the country districts. Among the foreign-born there are more in the larger than in the smaller places, until the oldest group is reached, where the proportion is reversed.

Conjugal Condition.—As was done when dealing with the age classification, so, when we take up the subject of the conjugal condition, the gross numbers are not given, but simply the percentages.

TABLE IX.

TOTAL POPULATION IN 1900 CLASSIFIED BY SEX AND CONJUGAL CONDITION ON BASE OF 1,000.

		New England.	Cities over 100,000.	50,000 to 100,000.	25,000 to 50,000.	Places under 25,000.
Aggregate	T.	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
	M.	494.3	490.0	483.1	486.9	499.4
	F.	505.7	510.0	516.9	513.1	500.6
Single	T.	541.9	573.3	553.6	565.8	525.8
	M.	277.3	289.5	274.7	282.6	273.2
	F.	264.6	282.8	278.9	283.2	252.6
Married	T.	387.6	360.8	378.9	373.0	400.5
	M.	194.7	181.3	189.5	186.9	201.4
	F.	192.9	179.5	189.4	186.1	199.1
Widowed	T.	64.5	61.4	62.1	56.8	67.3
	M.	19.0	16.2	16.0	15.3	21.2
	F.	45.5	45.2	46.1	41.5	46.1
Divorced	T.	3.4	2.5	2.5	2.2	4.0
	M.	1.5	0.9	0.9	0.8	1.9
	F.	1.9	1.6	1.6	1.4	2.1
Unknown	T.	2.6	3.0	2.9	2.2	2.4
	M.	1.8	2.1	2.0	1.3	1.7
	F.	0.8	0.9	0.9	0.9	0.7

Considering the total population (Table IX.), we find that 54.2 per cent. are single, 38.8 per cent. married, 6.4 per cent. widowed, and 0.3 per cent. divorced. As the size of

city increases, the proportion of single persons increases; and there are 5 per cent. more of this class in the cities over 100,000 than in the places under 25,000. The married, widowed, and divorced persons are most numerous in the smaller places. These figures, however, show nothing but the numbers of each class in the cities of different sizes. They are interesting for purposes of comparison, but they do not show conclusively the tendency of city life with regard to matrimony. To bring this point out clearly, we need to compare the numbers of single and married persons with the numbers in the different age groups. One population might have a larger number of children than another, so that the proportion of single persons would of necessity be large. In order to make a more careful study of this point, Table X. has been drawn up. If the Census had given the numbers of single, married persons, etc., by age groups for places as small as 25,000, the line of demarcation would have been drawn there; but this was done only for the total population of the States and the cities over 100,000. Therefore, in this table we must be contented with a comparison of the cities over this number and those below. This is not as satisfactory as the other tables, but it is the best that can be computed.

TABLE X.

TOTAL POPULATION IN 1900 CLASSIFIED BY SEX, AGE, AND CONJUGAL CONDITION ON BASE OF 1,000.

		All Ages.	Under 15.	15 to 35.	35 to 65.	Over 65.	Age unknown.
Aggregate:							
Cities over 100,000	T.	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
	M.	490.0	500.3	485.0	493.3	420.5	699.0
	F.	510.0	499.7	515.0	506.7	579.5	301.0
Places under 100,000	T.	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
	M.	495.4	501.3	492.8	497.4	466.5	661.6
	F.	504.6	498.7	507.2	502.6	533.5	338.4
Single:							
Cities over 100,000	T.	572.3	1,000.0	627.4	165.8	84.4	239.9
	M.	289.5	500.3	325.5	80.6	23.1	146.1
	F.	282.8	499.7	301.9	85.2	61.3	93.8
Places under 100,000	T.	534.9	999.7	605.5	135.6	72.9	267.6
	M.	274.5	501.3	323.9	66.9	26.7	175.2
	F.	260.4	498.4	281.6	68.7	46.2	92.4
Married:							
Cities over 100,000	T.	360.8	*	356.7	696.8	419.8	159.6
	M.	181.3	*	154.6	375.4	267.9	84.7
	F.	179.5	*	202.1	321.4	151.9	74.9
Places under 100,000	T.	393.9	0.2	380.2	746.1	477.1	280.7
	M.	197.9	*	163.1	393.4	303.6	167.3
	F.	196.0	0.2	217.1	352.7	173.5	113.4
Widowed:							
Cities over 100,000	T.	61.4	*	11.7	130.6	491.5	40.0
	M.	16.2	0.0	3.2	34.5	127.6	11.2
	F.	45.2	*	8.5	96.1	363.9	28.8
Places under 100,000	T.	65.3	*	9.5	169.0	443.9	75.6
	M.	19.7	*	3.4	32.4	132.7	26.5
	F.	45.6	*	6.1	76.6	311.2	49.1
Divorced:							
Cities over 100,000	T.	2.5	0.0	2.0	5.5	2.8	0.9
	M.	0.9	0.0	0.5	2.1	1.4	0.0
	F.	1.6	0.0	1.5	3.4	1.4	0.9
Places under 100,000	T.	3.5	0.0	2.4	7.8	4.2	2.6
	M.	1.6	0.0	0.8	3.7	2.5	1.8
	F.	1.9	0.0	1.6	4.1	1.7	0.8
Unknown:							
Cities over 100,000	T.	3.0	*	2.2	1.3	1.5	559.6
	M.	2.1	*	1.2	0.7	0.5	457.0
	F.	0.9	*	1.0	0.6	1.0	102.6
Places under 100,000	T.	2.4	0.1	2.4	1.5	1.9	373.5
	M.	1.7	*	1.6	1.0	1.0	290.8
	F.	0.7	0.1	0.8	0.5	0.9	82.7

* Less than 0.1.

The first thing noticeable is the greater disparity between the sexes in the large than the small cities. It is, therefore, necessary that there be a smaller number of married among the females than the males. This surplus could never have been married, or else must have been separated from their husbands by either death or divorce. The only alternative is that they are living apart from their husbands. It may be that the husbands of some are absent, but this number is more than offset by the married men among the immigrants who have left their wives at home. The natural result of such disparity between the sexes is a large number of single among the numerically superior. It is unfortunate that we cannot compare with these the places under 4,000 where the males outnumber the females; for it is probable that we should find here a greater proportion of married or, at any rate, of married plus widowed among the women than the men. Taking up the distribution by age groups, we find, of course, that practically all under 15 years are single. In all New England there are 30 males and 96 females married and 2 males and 8 females widowed in this earliest age group. None are divorced. Almost exactly half of these (66) are native whites of native parents. 31 native whites of foreign parents, 36 foreign whites, and 2 persons of negro descent. Of these, 23 are in places of over 100,000. Since these cities contain about 20 per cent. of the total population, it is clear that prematurely early marriages are not as common in the very large cities as among the remainder of the population. But the total number of cases is too small to enable us to draw any accurate conclusions. Proceeding to the age group between 15 and 35, we find that there are more single persons in the large than in the small cities. The same is true among the widowed, showing here the effect of the higher death-rate of the metropolis. There are, however, about 2.4 per cent. more married persons in the smaller places. This is quite as we should expect to find it. Cost of living, and particularly rent, is considerably higher in

the great centres. Many prefer to remain single to a greater age in the city on account of the difficulty of setting up a suitable establishment. The man has become accustomed to a certain standard of living, and feels that, if he marries, he will have to give up many pleasures which he has begun to look upon in the light of necessities. A wife to him is not an economic advantage. There are more opportunities for a young woman to support herself in a large city than elsewhere; and she may be unwilling to renounce her independence, and assume the cares of a home. Club life tends to intensify this feeling with both sexes. The large apartment building in these great centres makes housekeeping much easier for the wife, and partially overcomes this objection to taking the care of a home. It is by the farmer that the need of a wife is most severely felt; for to him she becomes an economic advantage, and in the sparsely settled districts, where social intercourse is slight, the home must be the great centre. We should therefore expect that in the small places there would be earlier marriages than in the large centres. With regard to sex there are in the age group between 15 and 35 more than twice as many single as married among the males in the cities of the first class, but not twice as many in the smaller places. There are about 50 per cent. more females single than married in the large cities, but an excess of less than 30 per cent. in the small ones. Less than a sixth of the males and more than a fifth of the females are married in both classes, caused by the fact that the latter marry at an earlier age.

We come now to the age group from 35 to 65. Here, again, there are more single and fewer married in the cities of the first class. The number of widowed has also grown more rapidly in the large centres, until there is now a difference of more than 20 in 1,000. In the previous age group the single outnumbered the married nearly 2 to 1, and were about sixty times as numerous as the widowed. Now there are about four times as many married as single, and the

latter are only slightly ahead of the widowed. The number of single persons is now greater among the females than the males. There are two reasons for this. The higher death-rate among the males has been continually depleting their numbers. Also, more men than women marry in the higher age groups. There are nearly three times as many widows as widowers in the large cities, while in the small places there are but a little more than twice as many. There are a few more widowers in the large than the small places, but the higher mortality of the cities does not affect the women as much as the men. The worry and dissipation of city life is fatal to the men, while the death-rates of women are not so much raised. In the registration area for 1900 the death-rate for males was 4.0 per 1,000 greater in the cities than in the country, while that for females was but 2.5 higher.*

Of persons over 65 years of age there are about a sixth more single to 1,000 of total population in the large cities. There are, then, more who never marry. The proportion of married is much greater in the smaller places. The widowed are much more numerous in the large cities. The number of married in the small places is so much larger than in the great cities in this age group, not only because there are fewer who have never married, but because the higher mortality of the large centre has broken up the marriage by the death of one of the parties. In the cities of first size single are about one-fifth as numerous as married persons, and one-sixth as the widowed. In the small places, on the contrary, the married outnumber the widowed. Among the single and widowed the females outnumber the males, but in the case of the married the opposite is true. In every case the disparity is greater in the large cities.

Occupations (Table XI.).—In the statistics of occupations only that portion of the population is included which is 10 years of age or older. Here we find that, with the single

*Twelfth Census of the United States, vol. iii., p. lxiv.

exception of the cities over 100,000, the number engaged in the gainful occupations increases with the size of the city.

TABLE XI.

TOTAL POPULATION OVER 10 YEARS OF AGE IN 1900 CLASSIFIED BY SEX AND OCCUPATION ON BASE OF 1,000.

		New England.	Places over 100,000.	50,000 to 100,000.	25,000 to 50,000.	Places under 25,000.
Population, 10 Years of Age and over	T.	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
	M.	492.6	487.2	479.0	483.5	498.7
	F.	507.4	512.8	521.0	516.5	501.3
Persons engaged in Gainful Occupations	T.	525.2	554.9	556.4	537.7	506.7
	M.	395.6	397.9	391.9	390.8	396.6
	F.	129.6	157.0	164.5	146.9	110.1
Agriculture	T.	63.6	4.4	6.0	8.5	104.1
	M.	61.4	4.3	5.9	8.4	100.5
	F.	2.2	0.1	0.1	0.1	3.6
Professional	T.	25.3	29.6	27.2	22.8	23.9
	M.	15.0	19.7	16.9	13.8	13.1
	F.	10.3	9.9	9.3	9.0	10.8
Domestic and Personal	T.	99.3	127.3	100.2	91.6	91.3
	M.	57.2	72.6	54.9	51.0	53.8
	F.	42.1	54.7	45.3	40.6	37.5
Trade and Transportation	T.	106.1	158.8	133.2	117.5	81.2
	M.	90.7	130.8	111.0	98.2	72.0
	F.	15.4	28.0	22.2	19.3	9.2
Manufacture and Mechanical,	T.	230.9	234.8	290.8	297.3	206.2
	M.	171.3	170.5	203.2	219.4	157.2
	F.	59.6	64.3	87.6	77.9	49.0

In the two highest groups the numbers are nearly equal. In no case is less than a half of the capable population at work. In this section the numbers over 10 years will be considered as the total population, since no record need be made of the children. 6 per cent. of the total population is engaged in agriculture. Here, as is natural, the proportion increases as the size of city decreases. Under 25,000, 10 per cent. are so employed; but in cities above this line the number in no case equals 1 per cent. About 2.5 per cent. are in the professional classes. The large cities contain more than their proportional share. The number of males in this class follows the order of cities, but with the females the

proportion is largest in the smallest places. This is doubtless due to the number of female teachers in the country districts, where the attendance in many of the schools is very small. When we come to domestic and personal service, we find 9.9 per cent. of the population included. Here, again, the proportion increases with the size of city. This progression is more marked for the females. With the exception of the cities over 100,000 the number of males shows small variations. The large cities are the termini of railroads and the great shipping points. We should therefore expect that, the larger the city, the larger would be the numbers engaged in trade and transportation. This is the case, and with the exception of agriculture this occupation shows the greatest variations. There are nearly twice as many thus occupied in the cities over 100,000 as in the places under 25,000. With the females the ratio is nearly 3 to 1. Since most of the women are employed as clerks, saleswomen, and stenographers, it is easy to see why they are so much more numerous in the business centres. As the cities over 100,000 are such centres, and the smallest places have more agriculture than the others, so the places from 25,000 to 100,000 are the manufacturing cities. In the cities of this size there are more engaged in this than in all of the other occupations combined. This cannot be said of either of the other classes.

When we consider the proportion between the sexes in the different occupations, we find it most nearly equal in domestic and personal service. Then follow in order the professions, manufacture, trade and transportation, and agriculture. This accounts, in great measure, for the exodus of females from the rural districts. There seems to be little which they desire to do in the country towns. The trades in which they are most largely represented are in the cities. They have gone there to obtain employment. As is true in most cases of migration, an economic cause is behind it. To 1,000 of total population there are about a half more

women at work in gainful occupations in the cities from 50,000 to 100,000 than in places under 25,000. No treatment of the rural problem can be exhaustive which does not give great weight to this factor.

Illiteracy.—This is no place to enter upon the relative merits of the city and country schools in New England, except in so far as the figures of Table XII. give their convincing testimony on the question. It is hard to get a measure

TABLE XII.

NUMBER OF ILLITERATES IN NEW ENGLAND PER 1,000 OF POPULATION 10 YEARS OF AGE AND OVER IN 1900.

	New England.	Places over 100,000.	50,000 to 100,000.	25,000 to 50,000.	Places under 25,000.
Total Population .	60.2	63.9	61.1	64.6	58.2
Native Whites . .	13.1	5.4	5.6	7.3	17.0
Foreign Whites . .	161.5	139.6	140.2	150.5	184.7
Colored	130.5	118.0	119.3	123.8	147.8

of education. It is much easier to get one for the lack of it. A good rough test is the ability to read and write. There are many, especially among the immigrants, who attend night school when in the prime of life; but the greater part of the people can read and write at ten years of age if they ever can. This rough test has therefore been applied, and the figures show the number out of 1,000 over 10 years of age who can neither read nor write any language. We find that for all New England there are 60.2 per 1,000 who can do neither. Looking at the table hastily, and consulting none but the total population, we should be inclined to say that the level of education was highest in the country, and lower in the large cities. Let us, then, divide the population into native whites, foreign whites, and colored. What do we find now to be the case? In every instance there is a steady progression in illiteracy from the largest to the small-

est places. Take the groups in order. Among the native whites there are over three times as many illiterates to 1,000 in the places under 25,000 as in those over 100,000. The level of education among the native whites is much higher in the cities than in the country. This has doubtless been intensified, in many cases, by the fact that the best educated in the country have gone to the cities. It is felt that, if a person is to make a success in a large city, a fair education is a necessity. The best have continually gone forth, and left the illiterate behind. But the superior advantages of the city schools should be given their share of praise.

The same is true of the foreign whites. The best of them have gone to the cities. The artists and musicians are found there. The uneducated peasantry have gone to the country. Some nationalities, like the Russians, are eager to avail themselves of any opportunity to improve their minds, that they may make a greater success of life. Others, like the Italians, do not seem to care so much for this. This difference in literacy between the foreign-born in the cities and country is due to the double fact that the best have gone to the cities, and that the opportunity for education by night schools is greater than in the country.

The case of the colored is not at all different. The best are in the cities. Here we find a combination of the reasons that related to the two previous classes. Some have been born and educated in New England, so that the same causes which apply to the native whites would hold with them. Others have come from the South, where the level of education is as low as in the countries from which our immigrants come. If they can read and write any language, it is English; but only a few of the Southern negroes can do this. In 11 of the States of this country more than half of the blacks are illiterate. When this class comes to the North, it is often to engage in farm labor, if male; and the proportion of illiterates in the country is increased.

We can now clearly see the truth of the statement that, although from the figures relating to the total population it would appear that there was less illiteracy in the country than the city, when we separate the classes, we find that in every case the level of education rises with the increasing size of city. This apparent contradiction is due to the different composition in nativity of the population in the various cities and towns. The discrepancy would be still greater if we considered that, generally, the males were better educated than the females, and that the greatest proportion of males was in the country.

Families and Dwellings.—There is, of course, no question about the relative number of persons to a dwelling in city and country; for the apartment house, with its large number of occupants, is seldom found outside a city. But it may be of interest to discover whether the size of family is larger in the one place or the other. Table XIII. will answer this.

TABLE XIII.

NUMBER OF PERSONS TO A FAMILY IN NEW ENGLAND IN 1900 ON BASE OF 1,000.

	New England.	Places over 100,000.	50,000 to 100,000.	25,000 to 50,000.	Places under 25,000.
Aggregate	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
1 person	48.6	40.3	38.3	35.2	55.2
2 persons	176.4	160.3	162.5	154.8	187.2
3 persons	195.5	181.9	194.4	187.6	200.9
4 persons	177.3	175.3	181.0	178.3	177.0
5 persons	138.9	143.8	144.4	148.1	135.0
6 persons	99.1	107.8	103.9	109.0	94.0
7 persons	65.2	73.4	69.3	72.7	60.8
8 persons	41.0	47.3	43.4	47.1	37.8
9 persons	24.4	28.4	25.6	28.8	22.3
10 persons	13.9	16.3	14.2	16.9	12.7
11 to 15 persons	16.1	20.2	17.8	18.3	14.2
16 to 20 persons	1.8	2.8	2.4	1.6	1.4
21 persons and over	1.8	2.2	2.8	1.6	1.5

In every case there are more families of 3 persons than of any other one number. In places over 25,000 the second place is held by families of 4, but in the small towns or cities families of 2 are next in order of magnitude. Places under 25,000 have the greatest number of any class in families of 3 or less, but for families of 5 or over there is not a case in which they do not have the smallest proportion. It is, then, very evident that the country is the portion of New England in which the smallest families are most frequently found. These small places contain two-thirds of the families with 2 persons or less, but only one-half of the number with 11 or over. The following figures, which are comparable with those of our recent Census,* will bring out clearly these distinctions:—

NUMBER OF PERSONS TO A FAMILY IN NEW ENGLAND IN 1900 ON BASE OF 1,000.

	New England.	Places over 100,000.	50,000 to 100,000.	25,000 to 50,000.	Places under 25,000.
1 person	48.6	40.3	38.3	35.2	55.2
2 to 6 persons . . .	787.2	769.1	786.2	777.8	794.1
7 to 10 persons . . .	144.5	165.4	152.5	165.5	133.6
11 persons and over .	19.7	25.2	23.0	21.5	17.1

There are exceptions in some cases; but, as a rule, it holds that, the larger the city, the more families of large size. This is caused to a considerable extent by the presence of the large hotels in the great cities. Most of the towns have one or more hotels, depending largely upon the summer trade or upon a few regular boarders; but they are almost always of small size. During certain seasons these hotels in the mountains or on the shore have a large corps of servants; but this is not permanent, like that of the city hotel.

* Twelfth Census, vol. ii. p. clxxxi.

TABLE XIV.

SIZE OF FAMILIES IN NEW ENGLAND IN 1900.

	Number of Persons to the Dwelling.	Number of Persons to the Family.	Number of Persons to Private Family.
New England	5.65	4.46	4.33
Places over 100,000	8.24	4.73	4.53
Places 50,000 to 100,000 . . .	6.77	4.61	4.44
Places 25,000 to 50,000	6.78	4.65	4.56
Places 10,000 to 25,000	5.63	4.60	4.46
Places 4,000 to 10,000	5.15	4.43	4.31
Places under 4,000	4.40	4.14	4.01

As was stated at the commencement of this section, the number of persons to the dwelling is greater in the large cities. In fact (Table XIV.) there are almost twice as many in the cities over 100,000 as in the places under 4,000. With a single exception, where the variation is so slight that it may be nearly overlooked, there is a regular gradation, following the order of size. When we come to the number of persons to a family, the same order holds; but the differences are by no means so great. When we eliminate the hotels, schools, boarding-houses, institutions, etc., and confine the study to the number of persons to the private family, we find that the cities over 10,000 are above the average, and those under this size below the average. But above this line of demarcation there is not a regularly ascending order, corresponding to the size of cities. Those between 25,000 and 50,000 now lead, followed by the cities over 100,000. Cities between 10,000 and 25,000 hold third place. It is hard to give a satisfactory explanation of the large size of private families in cities between 25,000 and 50,000, but the following is offered. We saw (Table IV.) that these cities had a large number of native whites of foreign parents, also (Table VII.) that they had the largest number under 15 years of age, and (Table XI.) the maximum number engaged in manufacture. We know that the foreign-born have

a high birth-rate, even when the difference in age classification is considered. These cities are then composed largely of a mill population, with a great number of foreigners. Their children, who are old enough, find work in the factories, and live at home with their younger brothers and sisters. This makes the number of persons to the private family extraordinarily large.

Proprietorship of Homes.—It is important to know whether in the cities or the country districts of New England a larger proportion of the population own the homes in which they live. Taking the whole area (Table XV.), about 41 per

TABLE XV.

PROPRIETORSHIP OF ALL HOMES IN NEW ENGLAND IN 1900 ON BASE OF 1,000.

	New England.	Cities over 100,000.	50,000 to 100,000.	25,000 to 50,000.	10,000 to 25,000.	Places under 10,000.
Total	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
Owned:						
Free. . . .	241.8	90.0	123.8	131.6	188.4	370.3
Encumbered	160.7	106.4	124.7	158.2	166.0	190.7
Unknown .	9.8	2.9	4.5	8.0	7.2	15.1
Hired	559.4	766.5	715.4	673.9	613.2	397.8
Unknown . .	28.3	34.2	31.6	28.3	25.2	26.1

cent. own and 56 per cent. rent. There is here, as we have seen in so many cases, a connection between ownership and size of city. In cities over 100,000 about 20 per cent. own their homes, while in places under 10,000 the percentage of ownership rises to over 57. The percentage of renters, since it is very nearly the complement of the former class, changes in inverse order. This is but natural. Land in the large cities is too valuable to allow each laborer to have a plot of ground with a little house on it owned by himself. There are so many needing to live near their work that these houses must be built up tier on tier. Only wealthy individuals or corporations can afford to buy this land and erect

the necessary buildings. Hence we find the mass of the people in the large cities contented or compelled to live in these tenements. It may be that cheap or rapid transit will in time overcome this tendency in part, but this is no place to enter upon a discussion of it. In the country, on the contrary, the desire of each family is to own its own home; and, if the statistics for places under 4,000 were available, it is probable that an even larger percentage of owners would be found. In the cities over 25,000 a majority of the owned homes are mortgaged, but in the small places the opposite is true. In places under 10,000 nearly two-thirds of them are unencumbered.

When we classify the population according to nativity, some striking facts are brought out (Table XVI.). Among the native whites, 49 per cent. own their homes, while 48

TABLE XVI.

PROPRIETORSHIP OF ALL HOMES IN NEW ENGLAND IN 1900 CLASSIFIED BY NATIVITY ON BASE OF 1,000.

	Aggregate.	Native White.	Foreign White.	Negro.	Indian.	Chinese and Japanese.
Total	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
Owned:						
Free	241.8	311.6	128.9	76.2	591.7	8.3
Encumbered	160.6	168.1	150.7	91.8	72.3	1.7
Unknown .	9.8	12.4	5.6	4.0	5.2	1.7
Hired	559.5	479.1	688.2	772.3	248.1	920.5
Unknown . .	28.3	28.8	26.6	55.7	82.7	67.8

per cent. rent them. The foreign whites own in 28 per cent. of the cases, the negro in 17 per cent., and the Chinese and Japanese in only 1 per cent. The Indians constitute a peculiar group, who own their homes in 67 per cent. of the cases. Among the native whites over 60 per cent. of the homes they own are free and clear, while more than half of those of the foreign whites are encumbered, 45 per cent. of the homes owned by the negroes have no encumbrance

on them. The Chinese and Japanese are peculiar. They rent their homes in over 90 per cent. of the cases; but, when they do buy one, they generally pay the cash for it. They are thrifty races, and hate to run into debt. But this table, however interesting and instructive, contains an element which detracts largely from its value. The different classes are not equally distributed throughout the territory. The foreign-born are proportionally much more numerous in the cities than in the country, and it is an entirely different matter for a person of ordinary means to purchase and pay for a home in a large city than it is in a small town. It would be better to compare them for the cities of different size. The only case in which this is possible is in cities over 100,000, and accordingly this has been done.

TABLE XVII.

PROPRIETORSHIP OF ALL HOMES IN CITIES OVER 100,000 IN 1900 CLASSIFIED BY NATIONALITY ON BASE OF 1,000.

	Aggregate.	Native White.	Foreign White.	Negro.	Indian.	Chinese and Japanese.
Total	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
Owned:						
Free	90.0	120.1	68.3	24.2	62.5	6.1
Encumbered	106.4	110.1	106.6	41.2	62.5	1.5
Unknown .	2.9	3.5	2.6	0.2	0.0	0.0
Hired	766.5	725.3	795.3	869.4	812.5	928.5
Unknown . .	34.2	41.0	27.2	65.0	62.5	63.9

In these largest cities we find (Table XVII.) that 20 per cent. own their homes. The only class in which the percentage is greater than the average is the native whites, who own over a fourth of their homes. The foreign whites come next, and have done very well to have made so much progress. The negroes own in 6.5 per cent. of the cases, while the Chinese and Japanese bring up the rear with less than 1 per cent. The Indians are so few in number that they may be overlooked. The same order holds as in the

previous table, but the superiority of the native whites is not so apparent. It is probable that large numbers of them, instead of renting in the city, prefer to live in a suburb and return daily to their work. This is particularly true of Boston. With regard to free ownership we note that only one-fifth of the homes owned by the Chinese and Japanese are mortgaged, while a little less than a half of those owned by the native whites are encumbered. Only about a third of the foreign whites and negroes have completely paid for the homes which stand in their names. The foreigners, however, hate a debt; and officers of savings-banks which have loaned money to the foreigners testify that, when the day of payment arrives, they are generally prompt with their interest, and often make it a point to reduce the principal at the same time.

Instead of taking, for purposes of comparison with the above, the statistics for all places under 100,000, it was thought better to introduce a table showing the ownership of farm homes in New England.

TABLE XVIII.

PROPRIETORSHIP OF FARM HOMES IN NEW ENGLAND IN 1900 CLASSIFIED BY NATIONALITY ON BASE OF 1,000.

	Aggregate.	Native White.	Foreign White.	Negro.	Indian.	Chinese and Japanese.
Total	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0	1,000.0
Owned:						
Free	569.7	593.8	409.7	405.4	833.3	250.0
Encumbered	294.6	275.1	423.2	337.8	133.3	0.0
Unknown .	19.9	20.7	15.2	16.9	0.0	0.0
Hired	109.7	104.1	146.6	239.9	33.3	750.0
Unknown . .	6.1	6.3	5.3	0.0	0.0	0.0

Table XVIII. shows this with the same classification by nativity. Here we are struck at once with the amazing difference between the conditions of ownership in the country and the great city. 88 per cent. of the farms are owned

by those who live on them. Among the native whites this reaches 89 per cent., and for the foreign white 84 per cent. Even the negro owns his farm in more than three-fourths of the cases. The Indians, Chinese, and Japanese together give a total of only 34 cases, so that they may be overlooked. Nearly two-thirds of the farm homes owned are free from encumbrance. Among the native whites this fraction is even greater. A little less than a half of the farm property of the foreign whites is unencumbered. The negroes come between these two classes, and have done well to pay for such a large percentage of their homes. The average value of the property of the white farmer in New England is $3,335, while that of the negro is but $2,205.*

Before taking up the extent to which the different nationalities have purchased farm or other homes, it is interesting to know the extent to which they are going to the country. There is a considerable number of writers who look to the foreigners to take up the deserted farms in New England. Table XIX. will show the extent to which the different nationalities are in the country.

TABLE XIX.

PRIVATE FAMILIES ON FARMS OR OTHER HOMES IN NEW ENGLAND IN 1900 ON BASE OF 1,000.

	Total Private Families.	Farm Homes.	Other Homes.
Total	1,000.0	152.1	847.9
United States or Unknown	1,000.0	243.9	756.1
Austria-Hungary	1,000.0	43.6	956.4
Canada (English)	1,000.0	112.0	888.0
Canada (French)	1,000.0	67.1	932.9
Germany	1,000.0	70.1	929.9
Great Britain	1,000.0	64.9	935.1
Ireland	1,000.0	47.0	953.0
Italy	1,000.0	16.9	983.1
Poland	1,000.0	33.3	966.7
Russia	1,000.0	14.6	985.4
Scandinavia	1,000.0	76.2	923.8
Other Countries	1,000.0	65.1	934.9
Mixed Foreign Parentage	1,000.0	73.8	926.2

* Twelfth Census, vol. v. pp. cii-cix.

We find that, in general, a little over 15 per cent. of the private families are on farm homes. Almost one-fourth of the native families are in the country, and still constitute the bulk of our farming population. The English Canadians are the only other class which have more than 10 per cent. in the country. These are largely in the northern tier of States. The Scandinavians, Germans, French Canadians, and British follow in order; and all have over 6 per cent. on farms. The Irish, Austro-Hungarians, and Poles follow with between 3 and 5 per cent.; while the Italians and Russians bring up the rear, with less than 2 per cent. The Germans, and particularly the Scandinavians, have always taken kindly to farming since they began to come to this country; and they have contributed a fair share to this occupation in New England. The only other classes which have been willing to go there have been the English-speaking immigrants. The Irish have always shown a liking for city life. The remainder is composed of the most recent immigrants; and they have, in large part, gone to the cities. The Italians had had a bitter experience with farming in their former home, and were not willing to try it here.* Then these classes did not know our language, and life was pleasanter for them in the large cities. It may be that, when they have learned the language and accumulated some money, they will be willing to take up the deserted farms, which it would seem that the methods of agriculture with which they are acquainted render them peculiarly fitted to successfully manage.

The next question to suggest itself is how much progress the different nationalities have made in paying for their homes either in city or country. Let us first take up farm homes.

* Report of the Industrial Commission, 1902, vol. xix. pp. 970, 971.

TABLE XX.

PROPRIETORSHIP OF FARM HOMES IN NEW ENGLAND IN 1900 BY NATIONALITY ON BASE OF 1,000.

	Total.	Owned.			Hired.	Unknown.
		Free.	Encumbered.	Unknown.		
Total	1,000.0	569.7	294.6	19.9	109.7	6.1
United States or Unknown	1,000.0	610.0	264.8	21.0	98.0	6.2
Austria-Hungary	1,000.0	296.8	579.9	0.0	109.6	13.7
Canada (English)	1,000.0	387.4	431.5	19.3	153.9	7.9
Canada (French)	1,000.0	355.8	416.1	12.6	208.9	6.6
Germany	1,000.0	366.0	489.6	10.2	129.8	4.4
Great Britain	1,000.0	454.0	360.2	14.5	164.3	7.0
Ireland	1,000.0	488.5	381.6	19.7	105.5	4.7
Italy	1,000.0	301.5	366.4	11.5	320.6	0.0
Poland	1,000.0	206.8	603.4	8.4	177.2	4.2
Russia	1,000.0	160.2	685.1	11.0	143.7	0.0
Scandinavia	1,000.0	280.0	513.1	8.3	195.6	3.0
Other Countries	1,000.0	341.5	382.2	19.5	251.7	5.1
Mixed Foreign Parentage	1,000.0	406.5	401.9	15.3	169.5	6.8

The native population own their own homes in about 90 cases in 100, and in over 60 cases they are free and clear. This is, as we should naturally expect, the best showing of any. The Irish have the next largest proportion of homes paid for. They have been coming here in large numbers for more than a half-century, and, although nearly penniless when they arrived, have accumulated considerable property in the mean time. They now own more than 10,000 farm homes in New England. The English, Germans, French, and English Canadians follow in order. None of these, with the exception of the French Canadians and Germans, had the difficulty of language to contend with, and were not, therefore, bound to their fellows in the cities. They own or hire over 20,000 farms. The Scandinavians do not make the good showing we should expect them to. Still, they control over 1,500 farms. Now follow the Austro-Hungarians, Italians, Poles, and Russians. Together they cannot claim 1,000 farms. It would be of great value if we could trace

the ownership of homes back to the census of 1860, in order that we might compare the progress made in ownership by the Irish at that time with that of the Italians at present. Unfortunately, this cannot be done, as the statistics go back no farther than 1890. Since then the Austro-Hungarians, English Canadians, Russians, and Poles in this country have made gains in the proportional number of farm homes owned free; but all other nationalities show a loss. This does not mean that they are not going to the country as much as formerly, but that the farms of which they are proprietors are not entirely paid for. They are either hiring them or buying them before they can pay the whole price. The Russians, Poles, and Austro-Hungarians are not renting farms in New England to any great extent; but they are beginning to buy them by giving a mortgage in part payment. It will be interesting to watch the extent to which these mortgages will be paid during the next decade.

When we come to the proprietorship of other than farm homes, we are confronted with an entirely different set of conditions.

TABLE XXI.

PROPRIETORSHIP OF OTHER THAN FARM HOMES IN NEW ENGLAND IN 1900 BY NATIONALITY ON BASE OF 1,000.

	Total.	Owned.			Hired.	Unknown.
		Free.	Encumbered.	Unknown.		
Total	1,000.0	185.2	137.8	8.1	637.0	31.9
United States or Unknown	1,000.0	274.1	142.3	11.6	535.7	36.3
Austria-Hungary	1,000.0	43.9	109.8	1.6	815.3	29.4
Canada (English)	1,000.0	104.0	114.3	7.0	740.7	34.0
Canada (French)	1,000.0	67.9	98.3	4.3	801.8	27.7
Germany	1,000.0	123.8	193.3	5.1	653.4	24.4
Great Britain	1,000.0	128.8	137.4	5.3	703.5	25.0
Ireland	1,000.0	151.7	151.9	5.9	663.9	26.6
Italy	1,000.0	38.5	62.8	2.9	855.5	40.3
Poland	1,000.0	19.9	69.7	2.3	864.2	43.9
Russia	1,000.0	15.8	93.3	2.0	861.4	27.5
Scandinavia	1,000.0	54.1	165.5	4.3	748.1	28.0
Other Countries	1,000.0	102.1	109.1	4.5	743.0	41.3
Mixed Foreign Parentage	1,000.0	103.8	125.9	5.8	735.8	28.7

Here the homes are hired in 63.7 per cent. of the cases. Property in the cities is so valuable that a workingman cannot afford to own his own home. In the small place he may work at his trade and buy a home. In the cities more homes are owned free than encumbered, but the difference is by no means as great as in the country. In nearly 50 per cent. of the cases the native-born own their homes, and in over 27 per cent. they are free. This is the only class in which more are free than encumbered. The Irish have the next largest percentage free, and have entirely paid for more than 33,000 homes. In fact, the number of free and encumbered homes is nearly equal. They still rent over 145,000 homes. The English own free 10,841 homes. The Germans have bought more than 11,000 homes, and have paid for more than 4,500 of them. These three classes have been here the longest, and should naturally own the most. When we consider the penniless condition in which the early Irish came, their progress has been remarkable. The English and French Canadians each own over 5,500 homes free; but the English rent only 39,229 homes, while the French rent 69,194. It is, therefore, evident that the English have made the greater headway. The French Canadians are largely lumbermen or operatives in factories. They are a more migratory element than the English, returning to their homes in Canada when work gets slack. The Scandinavians are the only other class which own more than 1,000 homes free. They have, however, bought, but not paid for, nearly 4,000 homes. The Austro-Hungarians, Russians, Poles, and Italians rent their homes in more than 80 per cent. of the cases. These are the latest immigrants, and are still herded together in the poorest sections of our cities. They have not yet been here long enough to tell what progress they will make. The Russians and Poles intend to stay here, and so have every inducement to buy homes. The Italians return to their home country in much larger numbers; and their ambition is to put aside money, and not to invest it in real

estate. These four groups own at present slightly over 1,000 homes completely paid for. If we include the farm homes, there are still less than 1,500 owned free. When we remember that there are nearly 160,000 of these classes in New England, we get a better idea of their progress. The Irish are less than 390,000, and yet they own free 38,000 homes. There are slightly more than 185,000 from Great Britain here, and yet they have bought and paid for 13,500 homes. The Austro-Hungarians, Poles, Russians, and Italians rent about 33,000 homes; while those from Great Britain rent in the neighborhoood of 60,000. The British rent less than twice as many, but have paid for nearly forty times as many. They own, encumbered, about four times as many. These figures give us a fair idea of the progress which has been made by the foreigners in becoming property-holders.

Summary.—The cities which in 1900 had a population of over 25,000 have increased about 400 per cent. since 1850, those from 10,000 to 25,000 over 200 per cent., those from 4,000 to 10,000 over 100 per cent., while the places at present under 4,000 have not held their own during this period.

Since 1860 the total population has increased at a continually accelerated rate.

There was an excess of about 64,000 females in 1900. In the places over 4,000 there were 4 per cent. more females than males, while in the towns under this number there were 5 per cent. more males than females. The excess of females is greatest among the negroes. Then follow in order the native whites of native parents, native-born, foreign-born, and native whites of native parents. In each class, however, there are more females than males.

The large cities have the greatest proportion in the productive age groups from 15 to 65 years. In the country districts are found the largest numbers of the old. This is particularly noticeable among the native-born, and the number of the children of this class in the country is small. The youth of the country are going to the cities on

account of the greater opportunities for employment to be found in them. The cities seem to attract females even more than males.

There are more single and widowed in the large cities and more married in the small places. This is largely due to the expense of maintaining a home in the city, the attractiveness of city life to single men, and the increased opportunities for single women to obtain employment.

The numbers engaged in gainful occupations are greater in the large than the small places. The difference is greater for females than for males. The numbers in domestic and personal service, trade and transportation, and the professions, vary directly with the size of places. Those in manufacture and mechanical pursuits are concentrated in the cities between 25,000 and 100,000, while the numbers in agriculture vary inversely with the size of place.

With all classes of the population the smallest proportion of literates is found in the small places, and increases directly with the size of city.

There are 4.33 persons to the private family in New England. The number is smallest in the country, and increases almost without exception as we approach the larger cities.

The native whites own more homes in both city and country than any other class, followed by the foreign whites, negroes, and Chinese and Japanese. Among the foreign classes the Irish have made the most progress in this respect, followed by the English, Germans, English and French Canadians. The Austro-Hungarians, Russians, Poles, and Italians have acquired but little property as yet.

REVIEWS AND NOTICES.

NOTES ON VITAL STATISTICS.

The need for improvement in the collection and handling of municipal statistics is forcibly presented in two recent publications, "The Vital Statistics of Iowa," by F. I. Herriott, Ph.D., reprinted from the *Iowa Medical Journal*, and a pamphlet on "Uniform Municipal Accounting and Statistics," by Dr. E. M. Hartwell, published for the National Municipal League. Dr. Herriott points out that the laws of Iowa with regard to the registration of deaths are persistently violated, and that many of the large cities of the State have never systematically published any vital statistics whatever. The census of 1900 reported serious deficiencies in the records of deaths in many Iowa cities, as at Des Moines, where 723 deaths were registered and where the census enumerators found 127 more. The reporting of infectious diseases is still more inaccurate; and yet the urgent need for sanitary reform is indicated by high infantile death-rates, obvious even through the imperfect statistics, and by recent epidemics of typhoid fever at Fort Dodge and Marshalltown.

Dr. Hartwell's report summarizes the progress made by the Committee on Uniform Municipal Accounting and Statistics in securing comparable summaries of municipal statistics in Newton, Brookline, Cambridge, Boston, Chicago, and Baltimore, and then points out the difficulty in instituting extensive reforms along this line until the collection of the original data to be summarized is radically improved. The fundamental figures for all comparative studies, statistics of population, are notoriously inaccurate in intercensal years. Dr. Hartwell gives the following table for three leading cities:—

ESTIMATE OF POPULATION FOR 1898 BY

Cities.	Health Dept.	U.S. Labor Dept., Jan. 1, 1899.	National Municipal League Committee,—estimated on	
			Rate of Growth. 1880-1890.	Rate of Growth. 1890-1900.
Baltimore	541,000	541,000	538,312	493,094
Cincinnati	405,000	415,000	335,195	319,885
St. Louis	623,000	623,000	553,456	548,102

The case of Baltimore shows clearly the weakness of the decennial census system, but in the other instances the errors of the estimators seem inexcusable. The differences in death-rates due to the substitution of the Health Department estimates for the true population are considerable. In Baltimore a death-rate of 20.65 in 1898 was decreased to 18.82, in Cincinnati one of 16.29 to 12.86, in St. Louis one of 16.07 to 14.13. No wonder that the committee concluded "it is impracticable at present to attempt to secure uniform returns throughout the whole field of municipal statistics from any considerable number of American cities."

The Annual Report of the Board of Health of Cambridge, Mass., for 1902, contains, besides the usual valuable statistics of seasonal prevalence and fatality of the commoner zymotic diseases, some significant data regarding the small-pox epidemic of 1901–02. Of 187 cases, 83 had been vaccinated, but all of the latter were over 15 years of age. Of the unvaccinated, on the other hand, 41, or nearly half, were under 15. Of the 83 vaccinated persons, 7 died. Of these 1 had been vaccinated eight years previously, the other 6, aged 19, 31, 40, 50, 62, and 76 respectively, in childhood. The death-rate in this class was 8.43 per cent., while among the unvaccinated it was 26.92 per cent. As in most of the epidemics of 1901–02, the fatality was therefore low, but yet three times that among the vaccinated.

The Board of Health of Brazil recently published a very thorough and satisfactory review of local yellow fever statistics, by Dr. Bulhões Carvalho, entitled "Contribuição para o Estudo Epidemiologico da Febre Amarella." The author appears not to be familiar with the work of Dr. Reed and his colleagues on the transmission of this disease by mosquitoes; but this only adds to the value of his confirmatory testimony. He first shows that disinfection has failed to control the malady, since in Rio de Janeiro there were 11,808 deaths from this cause in the thirteen years, 1877–1889, before the enforcement of disinfection, and 22,506 deaths in the thirteen years, 1890–1902, afterward. The yearly variations have been controlled mainly by a single factor, the number of immigrants entering the port, as Dr. Carvalho shows by two striking diagrams, high death-rates either coinciding with or following those years in which the largest increments of non-immune population were added. From another table it appears that between 1890 and 1903 88.2 per cent. of the deaths occurred among foreigners, and 9.55 per cent. among natives, while 2.25 per cent. were unknown. Finally, curves are given for seasonal prevalence, showing a very regular maximum in the autumn months of February and March, corresponding well with the maximum temperature which

most favors the development of mosquitoes. The seasonal distribution is so well marked that the average figures given are worth quoting for record.

DEATHS FROM YELLOW FEVER IN RIO DE JANEIRO BY MONTHS, 1851-1903.

January.	February.	March.	April.	May.	June.
5,941	10,988	14,926	9,542	5,282	2,756

July.	August.	September.	October.	November.	December.
1,318	704	426	416	672	1,501

In the *Journal de la Société de Statistique de Paris* for July, 1902, Clement Juglar makes a valuable contribution to the question, "Y a-t-il des périodes pour les mariages et les naissances comme pour les crises commerciales?" He shows by a tabular and graphic analysis of the birth statistics for Paris, London, France, England, Prussia, and the German Empire that simultaneous waves of increasing and decreasing birth-rates have swept over Europe with remarkable uniformity. From 1850 to about 1870 the number of births was increasing,—from 884,000 to 931,000 in France and from 593,000 to 938,000 in Prussia. The Franco-Prussian War caused a decrease to 767,000 in France and 832,000 in Prussia. Then came a period of increase up to 1876 in France and Germany and up to 1884 in England, with a reaction following the panics of 1873 and 1882. Germany since 1881 and England since 1890 have shown an increase, while the French rate with minor fluctuations has continued to fall. The movements in the various countries, considered certainly roughly, correspond; but the proof of their connection with financial crises is not quite as clear as might be desired.

Professor Kruse and Dr. Laspeyres contribute a suggestive review of the "Fortschritte der öffentlichen Gesundheitspflege in Rheinland-Westfalen während der letzten Jahrzehnte" to the *Centralblatt für allgemeine Gesundheitspflege*, vol. xxii., Parts 1 and 2. The authors compare in great detail the statistics of these provinces for the periods 1878–83 and 1893–98, and show in the main a most satisfactory improvement. The death-rate in the various age classes from 3 to 10 has decreased by from 10 to 40 per cent. of its original value, but under one year a slight increase from 164.0 per 1,000 births to 167.5 is recorded. Of the specific diseases the typhoid rate has decreased from 4.1

per 10,000 to 1.5, and the scarlet fever rate from 6.9 to .9. Diphtheria was equally prevalent in both periods; but, taking the years 1895–99 after the introduction of anti-toxine, there was a marked decrease. While tuberculosis has greatly fallen off, "diseases of the lungs" have increased. Combining the two, a 15 per cent. decrease appears. Heart disease, urinary disease, and nervous diseases have all diminished. Only cancer and suicide show marked increase on the face of the returns. Analyzing the statistics by districts, it appears that the improvement has been greatest in those of an urban character. This is especially true for tuberculosis, 26 purely rural districts showing rates of 63 and 60 for the two periods, while those for the 12 cities were 88 and 69.

The same periodical contains an elaborate study, entitled "Die tödtlichen Unglücksfälle in Preussen im Vergleich mit einigen anderen Staaten," by Dr. Prinzing, of Ulm. The author discusses the sources of error in such statistics from the difficulty of separating accidental deaths from murder and suicide, especially among young children. In Prussia the ratio of deaths from accident to 100,000 inhabitants was 64.1 for men and 15.2 for women for 1896–1900, less than for 1876–80, but more than for 1891–95. By age periods the rates per 100,000 living reach maxima of 82.8 for males between 2 and 3 and 55.1 for females between 1 and 2, decrease up to 15 years, and then increase again. Similar figures are quoted for Italy and England. The causes of death are then examined in detail by age and sex. Drowning is most common, causing a rate of 51.4 among males between 5 and 15. Falls affect the higher age periods, and burning and scalding cause a high death-rate among women. Comparing urban and rural districts, it appears that deaths by accident are more abundant in the country than the city except during the first year of life, when the reverse is the case.

Dr. W. J. Barclay, in the *Lancet* for Sept. 19, 1903, discusses "Tuberculosis and Cancer in New Zealand," comparing particularly the death-rates for those diseases in New Zealand and in England and Wales. Tuberculosis is not much more than half as prevalent in the colony, in spite of the fact that young adult males are in excess. Thus the rates for all tuberculous diseases from 1891 to 1900 were 10.55 in New Zealand and 20.10 in England and Wales, and for pulmonary tuberculosis 7.99 and 13.91, respectively. This is attributed to the temperate climate, outdoor life, and prosperity of the Australian community. For cancer the New Zealand rate is only slightly lower than that for England; and in both countries it is apparently on the increase. The inaccuracy of crude death-rates is well shown by the following table:—

DEATH-RATE FROM CANCER PER 10,000 PERSONS IN 1896.

New Zealand.						England and Wales.		
Crude.			Corrected to English Standard.					
Persons.	Males.	Females.	Persons.	Males.	Females.	Persons.	Males.	Females.
5.50	5.49	5.51	6.67	5.54	7.74	7.60	6.15	8.96

The Milroy Lectures for 1903 were delivered by Dr. H. Timbrell Bulstrode, on "The Causes, Prevalence, and Control of Pulmonary Tuberculosis," and, as published in the *Lancet* for July 11, July 25, August 1, and August 8, furnish a store of statistics relating to the "great white plague." In the first lecture the author quotes the figures gathered by Reincke at Hamburg and Körösi at Budapest, to show the heavy incidence of tuberculosis upon the poorer classes, and discusses various rather unsatisfactory attempts to show a close connection between this disease on the one hand and alcoholism and insanity on the other. In the second lecture statistics are given *in extenso* for a number of European countries, showing in general a steadily decreasing death-rate. Norway, Ireland, Italy, and France form apparent exceptions, the latter country showing a steadily high mortality from tuberculosis and "chronic bronchitis," a popular euphemism for the same disease. On the other hand, in Prussia a death-rate which was 31 in the census years, 1876, 1881, and 1886 has fallen to 27 in 1891, 22 in 1896, and 19 in 1901. Some of the general results may perhaps be summarized as follows, though the figures for different states are not of course accurately comparable:

DEATH-RATE PER 10,000 FROM PULMONARY TUBERCULOSIS.

Locality.	Period.	Rate.	Period.	Rate.
Saxony	1873-1875	23.1	1896-1900	19.3
Amsterdam	1854-1856	27.0	1897-1901	17.7
Copenhagen	1870-1874	34.2	1899-1901	16.6
Budapest	1875-1879	83.1	1895-1899	38.4
Switzerland	1876-1880	23.4	1896-1900	18.9
Lisbon	1881-1885	41.8	1896-1900	35.3
New York	1875-1879	38.3	1895-1899	26.0
London	1875-1879	25.5	1895-1899	17.6
Australasia	1871-1875	10.1	1896-1898	9.3
Scotland	1883-1887	20.5	1898-1900	16.7

C.-E. A. WINSLOW.

RECENT STUDIES OF INFANT MORTALITY.

The *Centralblatt für allgemeine Gesundheitspflege*, vol. xxii., Parts 1 and 2, contains a brief paper by Dr. Dietrich on "Säuglingsernährung und Wöchnerinnen-Asyle." The author obtained reports from 628 women of the poorer class in Cologne who had been patients at the Lying-in Hospital, which showed that 50.9 per cent. of the children had been nursed at the breast alone for three months, and only 21.5 per cent. for nine months. Among those who received such natural nourishment for less than three months, 37.3 per cent. died in the first year, while of the rest only 8.1 per cent. died.

Dr. F. Prinzing in the Third and Fourth Part of the same volume studies "Die angebliche Wirkung hoher Kindersterblichkeit im Sinne Darwinischer Auslese," controverting the view of Oesterlen that countries having a high infant mortality show more resistance among those surviving, due to more rigorous selection. He compares first the infantile rate with the rate between one year and five in various countries of Europe, in the provinces of Prussia and Austria and the cantons of Switzerland, with the result that no inverse relation appears. Comparison of infant mortality with tuberculosis rates and with the proportion of recruits fit for military service yields similarly negative results, and Dr. Prinzing closes with an able discussion of the causes of infant mortality, in which he shows that the diseases of the digestive canal and the respiratory tract mainly contributory to it do not specially affect children of generally weak constitutions, and that the infantile death-rate could not therefore be expected to be a selective one.

In the *Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege*, vol. xxxv., Part 2, is a valuable review of "Die Säuglingssterblichkeit und die Massregeln öffentlich-hygienischer Art, die zum Zwecke ihrer Herabsetzung genommen werden können," by Dr. A. Würtz, which begins with a compilation of the statistics of this subject as collected by Eröss (*Zeitschrift für Hygiene*, xix.) and others. The infantile mortality in thirteen European countries (deaths under one year per hundred births) was found to vary from 9.7 in Ireland to 28.7 in Bavaria, averaging 18.87. In 1899 the rates for the 29 German cities of over 100,000 population ranged from 15.4 in Frankfort-on-Main to 32.0 in Chemnitz, and averaged 22. Of this great mortality, moreover, about a third occurs in the first month. In Berlin the rate for the first month was 16.29, and for the twelfth only 1.68, with a steady fall between. A rather close connection exists

between the birth-rate and the infantile mortality (per 100 born) in various countries; and among families the same relation was shown by Neumann for Danish families, as follows:—

No. of children in family .	1	2	3	4	5	6	7	8	9 and more
Deaths per 100 births . . .	20.0	19.1	25.1	23.4	24.5	31.1	35.8	40.3	52.5

Probably the high birth-rate and the high mortality are independent effects of general economic conditions. By social grades the infantile mortality was found by Wolff to vary from 8.9 in the higher classes to 30.5 among the artisans. Dr. Würtz considers the enormous death-rate among illegitimate children, and then takes up the question of the causes of infantile mortality. From 30 to 60 per cent. of the deaths of young children are due to digestive derangements, according to various observers; and these occur almost entirely among the children denied their natural nourishment. The following table is quoted for Berlin:—

Food Supply.	Deaths from Diseases of the Digestive Tract.	
	Legitimate.	Illegitimate.
Mother's milk	1.3	1.6
Mixed human and animal milk,	7.9	23.7
Animal milk alone	18.7	29.9
With milk substitutes	51.1	71.9

Finally, it is in summer, when the bacteria in milk find opportunity for most excessive development, that the mortality is greatest.

DEATHS FROM DIARRHŒA IN 1899 IN GERMAN CITIES WITH OVER 15,000 INHABITANTS. RATES PER 10,000 INHABITANTS.

Jan.	Feb.	March.	Apr.	May.	June.	July.	Aug.	Sept.	Oct.	Nov.	Dec.
2.0	3.0	3.0	3.0	6.0	9.0	28.0	60.0	30.0	7.0	4.0	3.0

All these facts should be well known, and their practical importance is so great that they cannot be too often emphasized.

The *Centralblatt für allgemeine Gesundheitspflege*, vol. xxii.,

Parts 5 and 6, contains a somewhat similar paper by Dr. Arthur Keller on "Säuglingssterblichkeit und Säuglingsfürsorge." He quotes from Maurel an interesting analysis of deaths during the various parts of the first year:—

AVERAGE NUMBER OF DEATHS PER DAY IN FRANCE IN 1895.

0-4 Days.	5-9 Days.	10-14 Days.	15-30 Days.	2d Month.	3d Month.	4th-6th Month.	7th-12th Month.
4,341	1,738	1,249	1,210	638	490	311	188

The author, like Dr. Würtz, believes that the proportion of infantile mortality due to digestive disorders is commonly much underestimated as a result of defective diagnosis, and holds that these causes probably account for 70 to 80 per cent. of the total deaths under one year.

Dr. John Tatham contributes some tables of "Infant Mortality" to *Public Health* for October, 1903, which show that the rate of deaths under one year to 100 births has during the last ten years ranged above and below an average of 16.8 for males and 13.8 for females, showing no general tendency toward a decrease. Diarrhœal diseases added 2.9 to the rate for males and 2.5 for females, a much lower proportion than that given by the German authorities.

Another contribution to the same subject is a study of "The Factors which determine the Local Incidence of Fatal Infantile Diarrhœa," at Croydon, by Dr. H. M. Richards in the *Journal of Hygiene* for July, 1903. That infantile mortality has been increasing from this cause is well shown by the following figures:—

DEATHS UNDER ONE YEAR PER 100 BIRTHS.

	Total.	Diarrhœa and Enteritis.	Other Causes.
1883-1887	11.8	1.6	10.2
1888-1892	11.6	1.0	10.6
1893-1897	14.2	2.5	11.7
1898-1902	14.3	3.8	10.5

For the ten years, 1893–1902, the rate for diarrhœa and enteritis was 3.1; and of this the third quarter of the year contributed 2.6. Among breast-fed children the author computes the death-rate per

100 from diarrhœal diseases during the first six months of life as .5 among the entirely breast-fed, 3.5 among those fed on condensed milk, and 3.8 among those fed on cow's milk. Dr. Richards is inclined to invoke the influence of polluted soil as a contributory cause in the infection of milk.

In all the papers cited the danger from an ordinary city milk supply and the advantages of mother's milk are made very evident. The possibility of a proper artificial milk supply is considered by Dr. G. F. McCleary in the *Lancet* for Oct. 3, 1903. He points out that the low death-rate among breast-fed children may be due not only to their freedom from infection, but also to the acquisition of specific immunizing bodies transmitted according to Dr. Welch through the mother's milk. When, however, this natural nourishment cannot be had, modified and sterilized milk furnishes a fair substitute. Dr. McCleary examines the statistics of children fed on such milk supplied from a public station in Battersea, and shows that, while the death-rate per 100 births in the whole borough (excluding deaths in the first seven days) was 11.89, that among the dépôt-fed children (excluding those taking the milk for less than a week) was 6.34. This is an admirable showing, considering that most of the children receiving the modified milk were under six months old, many were sick, and a high proportion illegitimate, while of course many of the children outside were fed at the breast in a normally healthy way.

C.-E. A. Winslow.

CENSUS WAGE INQUIRY.

Employees and Wages. By Davis R. Dewey. *Special Report, Twelfth Census of the United States.* Washington, 1903. pp. cxv, 1228.

This report is the result of a special inquiry planned by Mr. S. N. D. North in regard to the wages of individual employees in a number of selected manufacturing establishments in the United States for the years 1890 and 1900. For several censuses the problem of making a statistical presentation of the wages of workmen has been one of increasing difficulty. The reasons for this have been clearly recognized by the census officials. In brief, the difficulties in the interpetation of census wage statistics are due:—

(1) To the lack of information in regard to the precise character of the work performed by each employee, and the consequent inability to distinguish between the skilled and unskilled laborer. If there

had been a change in the proportion of skilled and unskilled labor between two given periods, comparisons based upon the use of figures returned for the total number of employees, regardless of occupation, would be seriously impaired.

(2) To the difficulty of determining the exact number of employees among whom a given amount of wages is distributed, and the consequent impossibility of deriving a satisfactory term which will express the earnings of an individual employee.

(3) To the disregard, in the statistics of earnings, of the working time of the individual.

In addition to these fundamental defects it is to be noted that the only kind of statistical wage term derived from the census data is an average which is necessarily of so crude a character that the census authorities, in the introduction to the Report on Manufactures of the Twelfth Census, very wisely discountenanced its use.

The principles controlling the present investigation were briefly as follows:—

(1) The restriction of the inquiry to a few stable and normal industries.

(2) Collection of actual rates of wages.

(3) Classification of employees by rates of wages and, as far as possible, by occupations.

The present inquiry is concerned primarily with rates, earnings being used only when the data in regard to rates are defective or require further interpretation.

In the collection of data care was taken to select essentially manufacturing localities. In all 34 industries are covered, nearly all of a permanent character, which are not violently affected by seasonal influences.

The material used in the inquiry was derived from the pay-rolls of employees. Only in this way was it regarded possible to secure returns from all the constituent elements in the given establishments. This method removes all opportunity for either exaggeration or undervaluation, and also to the possibility of substituting a customary wage for the actual one. Special effort was made to select establishments which may be regarded in every way representative. The number of pay-rolls in the compilation of the tables was 720.

In the tabulation of the statistics two methods of grouping were followed: one was the assumption of returns for a given group without regard to establishments' lines for the purpose of making classified tables of wages for particular occupations with appropriate grouping according to the section of the country; the other method

is to treat a given establishment in a given industry as uniform, and classify all the workmen within this unit according to the wage received. The number of occupations separately tabulated was 318 for males and 82 for females.

In classifying the wage statistics, the group method, instead of the use of the average, was adopted. In order to facilitate the compilation of the two given sets of returns so as to ascertain what changes had taken place, the term "cumulative percentage" was introduced. The cumulative percentage represents the proportion of the total number of persons in a given table receiving a wage as great as, or greater than, the lowest wage of the given wage group.

The use of the columns of cumulative percentages makes it easy to determine the range of wages for any given proportion of the working force. By this means, also, it is possible to indicate the wage group of the employee who stands half-way between the lowest-paid and the highest-paid employee in the class under consideration. By the use of the median, employees at exceptional rates, either low or high, are not given an undue weight or importance, as they are when the average is used.

Another advantage of the cumulative percentage lies in the facility in showing the wages of the employees who stand at selected points along the whole series of employees, as, for example, at one-quarter and three-quarters up the ascending scale. The terms at these particular points are called "quartiles," and within these two limits would clearly fall the wages of at least one-half of the working force.

In order to present the results derivable for the detailed tables in a form in which they can be readily compared, summaries have been made showing the median and quartiles for all the tabulations of the occupational occupation. It should be noted, however, that the basis of comparison furnished by the medians and quartiles is not always satisfactory. Particularly is this true where the numbers are small or the workmen employed are massed at a few rates widely separated one from another. Accordingly, in the analysis of the tables the significance of the median and the quartiles has in every case been tested by reference to the complete cumulative percentages; and from the detailed tables the reader can form an independent judgment regarding the changes which have taken place.

The results of the inquiry in part are summarized as follows:—

Cotton Manufacturing.—Wages of both men and women increased in the New England States between 1890 and 1900. In the Southern States there was, on the whole, but little change. For males the range of wages of the middle half of the working force in cotton mills

in New England in 1900 was $6.50 to $12 per week as compared with a range of $6 to $11 in 1890. In the Southern States the range was $4.50 to $7 per week in 1900 as compared with $4.50 to $7.50 in 1890. The rates of wages for the middle 50 per cent. of female spinners in New England ranged from $5 to $6.50 in 1900 as compared with $4.50 to $6.50 in 1890. For female weavers the range was $6.50 to $9 in 1900 as compared with $5.50 to $8 in 1890. In the Southern States rates for the latter occupation were slightly higher in 1900 than in 1890.

Woollen Industry.—Most of the returns are for the New England States. The wages of both men and women in this section increased. In 1900 the range of the middle half for males was from $6.50 to $11.50 as compared with $6 to $11 in 1890, and for women from $6 to $9 per week as compared with $5 to $8 in 1890. The range of wages of male weavers increased from $6.50 to $9.50 in 1890 to $7 to $11 in 1900. For female weavers the range was raised from $6.50 to $9 in 1890 to $7 to $10 in 1900, and for female spinners from $4.50 to $6.50 in 1890 to $6 to $7 in 1900.

Dyeing and Finishing Textiles.—There was an increase for males in the New England States, and a decrease in the Middle States. For females there was but little change. Wages in carpet and knitting mills show little change between 1890 and 1900.

Agricultural Implements.—Nearly all of the returns for agricultural implements factories relate to the Central States. With few exceptions there has been an increase in the several occupations. For assemblers the range for the middle half was from $10.50 to $14.50 in 1900 as compared with $10.50 to $14 in 1890; for carpenters and hand woodworkers the wages of the middle half were from $11.50 to $14 in 1900 and from $10.50 to $13.50 in 1890; for general laborers, from $9 to $10.50 in 1900 and from $7 to $10 in 1890; for metal machine operatives the range was from $9 to $14 in 1900 and from $9 to $12.50 in 1890; for journeymen machinists wages in 1900 ranged from $13.50 to $16, and in 1890 from $12 to $16; and for moulders a decrease is shown from $12 to $19 in 1890 to $10 to $15 in 1900.

Furniture Factories.—The wages for the industry as a whole declined in the Middle States. Rates of cabinet-makers, however, remained stationary, and finishers show a slight increase. In the Central States there was but little change.

Lumber and Planing Mills.—Reports principally from the Central and Pacific States show a slight increase for the industry as a whole. In the Central States the range of the middle half was from $8 to $10 in 1900 as compared with $8 to $9.50 in 1890. In the Pacific States

in 1900 the range was from $10 to $14.50, and in 1890 from $10 to $15.50.

Carriages and Wagons.—There was a slight increase in the Middle and Central States, from which sections the bulk of the returns are derived. In the Middle States the range of wages for the middle half was from $11 to $16.50 in 1900 and from $10 to $16.50 in 1890. In the Central States the range was from $7 to $11 in 1900 and from $6.50 to $11 in 1890. The considerable difference in height of wages between these two sections is caused by a difference in the nature of the goods produced by the factories from which reports were obtained.

Car Shops.—Rates in the Middle States fell during the decade. In 1890 the range of the middle half was $7.50 to $13.50, and in 1900 $7 to $12. In the Southern States there was little change. In 1890 the range was $5.50 to $12, and in 1900 $6 to $12. In the Central States there was a decline from a range of $9.50 to $17 in 1890 to $9 to $15.50 in 1900. The wages of machinists in this section, however, increased from $13 to $16 in 1890 to a range of $14 to $16.50 in 1900.

Foundries and Metal Working.—As a whole, there appears to have been little variation in rates, although in particular occupations there were changes of greater or less magnitude. Wages are highest in the Pacific States, the middle half in that section drawing from $12 to $18.50 per week in 1900 as compared with $10.50 to $19.50 in 1890, and lowest in the Southern States, where the range of the middle half in 1900 was from $6 to $13, and in 1890 from $7.50 to $14.50. In this industry twenty-eight different occupations are separately shown. Blacksmiths in the Middle States show considerable decrease, the range in 1900 being from $13 to $18.50 as compared with $15 to $22 in 1890. Boiler-makers in the same section drew from $10 to $15.50 per week at both periods. Floor moulders in the Central States in 1900 ranged from $15 to $21 per week as compared with $14.50 to $18.50 in 1890. Three classes of machinists are shown. The middle range for journeymen machinists, including tool-makers and metal pattern-makers in the New England States, was from $11 to $15.50 per week in 1900, and in 1890 from $11.50 to $15.50; in the Middle States in 1900 from $12 to $16.50, in 1890 from $13 to $18.50; in the Southern States from $12 to $17 in 1900, and from $12.50 to $17 in 1890; in the Central States from $12 to $16 in 1900, and in 1890 from $12 to $15.50; and in the Pacific States the range in 1900 was from $17.50 to $21.50, in 1890 from $18 to $21. Erectors and assemblers in the Middle States ranged in 1900

from $11 to $15.50, slightly lower than in 1890; in the Central States the range is from $9 to $14 in 1900 as compared with $7.50 to $12.50 in 1890. The third class, composed of machine tenders and machinists of less skill, in New England in 1900 ranged from $8 to $12.50, in 1890 from $7.50 to $12.50. In the Middle States in 1900 the range was from $7.50 to $12.50, and in 1890 from $9 to $14. In the Central States the range in 1900 was from $7.50 to $12.50 as against $5 to $11 in 1890.

Iron and Steel.—Reports include blast furnaces, puddling furnaces, rolling mills, Bessemer converters, and open hearth furnaces. Owing to the prevalence of turn or tour duty in this industry, the rates given are for two weeks' work instead of a single week. In the Middle States the middle half were paid at rates from $15 to $27 in 1900 and from $15 to $28 in 1890 for the two weeks' work; in the Southern States the middle range at both periods is from $13 to $26; and in the Central States at both periods the rates are about the same, the middle half ranging from $21 to $30 in 1900 and from $21 to $31 in 1890.

Ship-yards.—There was a decrease in wages in the New England and Pacific States. In the former section the range of the middle half was $15 to $18.50 in 1890 and $11.50 to $15 in 1900, in the Pacific States $12 to $20 in 1890 and $10.50 to $17 in 1900. In the Middle States there was an increase, the range rising from $8 to $14.50 in 1890 to $9 to $15.50 in 1900. There was little change in rates in the Central States.

Breweries.—Returns are principally from the Middle and Central States. The figures for these sections, as well as for the sections from which only a few returns were received, show an increase in wages for the decade. In many establishments there was also a reduction in the working time, and the hour rates show a much greater increase than the week rates.

Cigar Factories.—Wages are practically unchanged in the New England States, but considerably higher in 1900 in the Middle States. The range for the middle half in the latter section was from $6.50 to $12.50 in 1890, and from $8 to $13 in 1900.

Clothing Factories.—Returns indicate a decrease in the wages of men, and also (though less marked) in the wages of women. Most of the returns are from the Middle States; and in that section there is little change in the rates for women, but for men the range of wages of the middle half was $7 to $16.50 in 1890 as compared with $5.50 to $14.50 in 1900.

Flour Mills.—There was practically no change in wages between 1890 and 1900.

Glass Factories.—Returns are principally from the Middle and Central States. In the former section the range of the middle half for blowers was from $22 to $29 in 1890, and from $22 to $26 in 1900. For gatherers it was $9 to $14 in 1890, and $11.50 to $14.50 in 1900. When all occupations are combined, the range is $7.50 to $15 in 1890 and $6 to $14.50 in 1900. In the Central States a marked increase in rates is shown, the range of the middle half for blowers being $19.50 to $28.50 in 1890 and $22.50 to $30.50 in 1900; that for gatherers, $11 to $15.50 in 1890 and $12 to $22.50 in 1900; and that for all occupations, $7.50 to $16.50 in 1890 and $8 to $18.50 in 1900. In this industry a large number of boys are employed, and their rates show an increase for the decade.

Paper Mills.—There has been little change in the wages of men between 1890 and 1900. For women there is a slight decrease, due mainly to changes in the goods made, wood pulp having largely superseded rags as material.

Printing Industry.—The change from hand to machine composition between 1890 and 1900 makes a comparison of wages very difficult. If all the machine compositors reported in 1900 are included, however, the comparison indicates an increase in wages.

Shoe Factories.—Returns sufficiently large for comparative purposes are presented for shoe factories in the New England, Middle, and Central States. In the New England States there was a slight decrease during the decade; in the Middle and Central States rates were higher in 1900 than in 1890, the range for the middle half in the former section being from $6 to $13.50 in 1890 and from $7 to $14.50 in 1900, while in the Central States the range was from $5.50 to $14.50 in 1890, and from $6.50 to $15.50 in 1900.

Leather.—Important changes in process took place during the decade, and machinery largely displaced skilled hand labor. As a result wages were lower in this industry in 1900 than in 1890.

NOTE ON STATISTICS OF PROSTITUTION IN CUBA.

(The following note is of interest as confirming and roughly measuring the common statement that prostitution in Cuba is almost confined to the class of foreign-born women. It was prepared for, but not included in, the Census of Cuba, 1899, and is now published in the belief that any statistical information about a class, of which little is known, and regarding the legal treatment of which opinions differ radically, is worthy of preservation.)

During the tabulation of the occupation returns for the Cuban census of 1899 it was remarked that in the city of Habana a certain number of women had reported their occupation as that of a prostitute. This raised the question whether it was desirable to recognize this occupation in the tables. The attitude of the United States Census Office, the practice of which was followed in that census, is stated in the following extract from "Remarks on the Table of Occupations" contained in the United States Census:*—

The following tables embrace gainful and reputable occupations only. All persons whose means of livelihood are criminal, or, in the judgment of mankind, shameful, are excluded.

The reason for excluding gamblers, prostitutes, keepers of brothels, and such persons from the Tables of Occupations, has not been found in any sensitiveness at the mention or recognition of these classes as actually existing in the community, but in the consideration that, from the necessity of the case, the numbers thus reported must be wholly inadequate to the fact, and that a seeming count of them in the census would have the effect to mislead rather than to instruct. Here and there, at the enumeration of the Ninth Census, such persons had the assurance to report themselves by their true designations, or assistant marshals took the responsibility (and in some cases the risk) of writing down the real occupation of members of these classes who had sought to misstate their avocations or to disguise them under ambiguous terms; but an analysis of the schedules soon made it evident that this had not been done, as indeed was not to be expected, with such uniformity as to secure even approximately correct results. All such titles are therefore dropped. Some from these classes may have taken refuge, through false statements, in one or another of the occupations of good repute (notably keepers of brothels as "boarding-house keepers," a euphemism familiar to the compilers of city directories); but as a general rule, where the calling was not correctly given, it was wholly withheld, and it may therefore be assumed that substantially the whole body of persons pursuing disreputable and criminal occupations are omitted from these tables.

*Census of 1870, Population and Social Statistics, p. 659.

While these remarks still hold good with reference to the total number of persons engaged in such an occupation, yet with the methods of tabulation introduced since the passage was written, whereby the returns regarding any group may be readily analyzed, it is possible to get valuable information from returns confessedly very incomplete. Accordingly, it was decided to distinguish this occupation in tabulating the returns for the city of Habana and the province of Santa Clara, where also a number of such returns were found on the schedules.

Under the terms of a Cuban law promulgated July 17, 1877, all prostitutes were to be inscribed in the register, to pay a fee, and to receive a certificate of enrolment. All houses of prostitution were to be licensed and to pay a monthly fee, being divided for that purpose into classes, for which the fees differed. This system was continued as a hygienic measure by the United States military authorities. Efforts to supplement the scattering returns in the censuses were therefore made by a request through the Director of Police at Habana to the authorities of each municipal district that they would report the number, race, and nativity of all registered prostitutes.

Of the 132 municipalities, 109, or nearly five-sixths, replied to the request for supplementary information; and from 23 municipalities no report was received. The municipalities which did not respond included by the census 201,126 people, or 12.8 per cent. of the population. The reports received, therefore, refer to municipalities embracing about seven-eighths of the population of Cuba and all the cities of over 10,000 people. Of the 109 municipalities reporting, 84 reported no registered prostitutes, while 25 reported numbers ranging from 3 to 1,441. The 84 municipal districts which reported no names include a population of 623,123. The 25 which reported names embrace a population of 748,538; that is, for the population reporting about 45 per cent. reported no registered prostitutes, while 55 per cent. reported registered prostitutes. The 25 municipal districts reporting names on their registers contained rather less than half (47.6 per cent.) of the population of the island. The total number of registered prostitutes reported was 2,123, more than two-thirds of whom were in the city of Habana. While doubtless this number represents only a minimum limit to the total number of persons engaged in this occupation, yet there is no apparent reason for supposing that the omissions were proportionately greater with one race than with the other, with the native than the foreign born, or with one age group than another. Consequently, the race, nativity, and age distribution of these 2,123 women probably does not differ

very much from the proportion that would be established if all persons of this class could be included in the tables. Of the total number 1,511 were white, and 612 were negro or mulatto; that is, rather over seven-tenths (71.2 per cent.) of these women were white, and rather less than three-tenths (28.3 per cent.) were negro. As the white females constitute about two-thirds (64.6 per cent.) of the total female population, and the negro females nearly one-third (35.4 per cent.), it would seem that prostitutes are recruited about as much from one race as the other; but, owing to the incompleteness of the returns, no more specific inference is warranted. Of the total number, also, 1,477 were returned as native and 646 as foreign born. The best basis with which to compare these numbers is apparently the total number of native and foreign born women 15 years of age and over. The foreign-born colored women are not returned by age groups; and therefore, to get such a basis of comparison, it has been necessary to assume the following proportion: The foreign-born white females of all ages (26,358) are to the foreign-born white females under 15 (2,548) as the foreign-born colored females of all ages (6,458) are to *x; i.e.*, the foreign-born colored females under 15. In this way the fourth term is found to be 624. On this assumption the native females are 443,376, and the foreign-born females are 30,269. It follows that, in Cuba there are 33 prostitutes registered to every 10,000 native women at least 15 years old and 218 to every 10,000 foreign-born women at least 15 years old. That is, the proportion of this class among the foreign-born women is between six and seven times as great as among the native women.

As nearly two-thirds of the prostitutes were reported from the city of Habana, a similar comparison for the population of that city has been made. The total number of native women at least 15 years old was 87,516, and the total number of foreign-born at least 15 years old was 11,526. The total number of native registered prostitutes was 924, the total number of foreign-born registered prostitutes 517. Hence to every 10,000 adult foreign-born women there were 449 registered prostitutes, while to every 10,000 adult native women there were only 106. It would seem that in Habana this class is recruited from the foreign-born to more than four times the amount that it is from the natives.

Incomplete returns for the province of Santa Clara were tabulated by the census. A total of 244 persons were found in that province who admitted to the enumerators that they followed this occupation. Assuming the proportion already explained in order to estimate the number of adult native and foreign born colored, it appears that

in Santa Clara province there were 20 registered prostitutes to every 10,000 adult native white women, 29 to every 10,000 adult native colored women, and 56 to every 10,000 adult foreign-born white women. The figures for the city of Habana and the province of Santa Clara seem to conflict with those previously given for the whole island. From the figures for the whole island it appears that prostitution is from six to seven times as common among foreign-born women as among natives; from the figures for Habana city it appears that it is from four to five times as common among foreign-born women as among natives; and, finally, from the figures for Santa Clara province it appears that it is not quite three times as common among the foreign-born white women as among the native white women. These results seem on their face inconsistent. Yet they may be harmonized in case most of the foreign-born women are living in those 25 municipal districts which have reported registered prostitutes. To test this, the number of foreign-born white females in these 25 municipal districts has been found. There were 19,334 foreign-born white females in these districts, and in the whole island only 26,358. In other words, 73.3 per cent. of the foreign-born white females on the island were in some one or other of these 25 municipal districts, although less than half of the population of the island (47.6 per cent.) resided there. Applying similar calculations to the foreign-born white males, it appears that two-thirds of them (66.5 per cent.) live in some one or other of the 25 districts reporting registered prostitutes. One may safely infer that immigration and registered prostitution are characteristic rather of urban than of rural Cuba. On the whole it appears from the fragmentary data that the proportion of foreign-born registered prostitutes is decidedly greater in Habana than it is in other parts of the island, but that in general the likelihood of foreign-born white women becoming enrolled in this class is at least two to three times as great as of native white women.

In 759 cases the age was reported. From these the following table has been prepared. It gives the total number of women on the island belonging to a certain age group, the total number of registered prostitutes known to belong to the same age group, and the number to every 10,000 women of that age group.

Age Period.	Female Population.	Registered Prostitutes.	Registered Prostitutes to Every 10,000 Females.
15-19	93,689	198	21
20-24	73,951	293	40
25-29	64,199	151	24
30-34	54,789	66	12
35-39	45,715	24	5
40-44	38,036	16	4
45-49	26,727	6	2
50+	76,539	5	1
15+	473,645	759	16

From this table it appears that the greatest prevalence of prostitution is at the ages of 20 to 24; that the five years immediately preceding and following are characterized by a prevalence about one-half that of the maximum; that the ages 30 to 34 show about one-half the rate of the ages 25 to 29, and the ages 35 to 39 about half that of the preceding quinquennial group. Whether this rapid decrease in the prevalence of prostitution with advancing years is due to persons passing out from it to other occupations or to the high mortality characteristic of this class, or to both, the figures do not enable one to ascertain.

The conclusions of this note may be summarized as follows:—

1. Registered prostitutes are reported in 25 municipal districts, including all the large cities of Cuba and nearly half the population.

2. The two races are represented in this class in about the same proportions as in the general population.

3. This class is most common in those parts of the island, especially urban districts, where the foreign-born are most largely represented.

4. In the capital this class comes from foreign-born women to about four times the degree that it does from native women. In other parts of the island the difference is probably less marked.

5. The maximum proportion in this class is found between the ages of 20 and 25, and the proportion at each of the three succeeding five-year periods is about half that of the group immediately preceding.

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JUVENILE LAW-BREAKERS IN BOSTON.

The Institutions Registration Department of Boston publishes in its Report for the year ending Jan. 31, 1902, an important study by John Koren, chief of its statistical division, on the subject of Juvenile Law-breakers in Boston. The study is divided into two parts, "arrests" and "disposition of juveniles arrested."

In the first part are given:—

(1) The number of arrests of persons under eighteen for each year of age for the years ending Oct. 1, 1896 to 1901, inclusive; also for the year 1889–90.

(2 and 3) The number of arrests for each offence for each year of age in 1900–01.

In the second part are given:—

(4) The disposition of cases in the lower courts according to age, and

(5) according to offence.

(6) A comparison of the dispositions made of cases by the various lower courts.

(7 and 8) The disposition of cases originating in the Superior Court, and

(9) The disposition of cases appealed to the Superior Court.

Under the head of arrests the leading and satisfactory fact is brought out that the number of persons under eighteen arrested by the police has practically not increased from the year ending Oct. 1, 1895, to the year 1899–1900, inclusive, and that the number was almost precisely the same in the last-named year as it was in 1890 (2,478 as against 2,487). In 1900–01 there was a slight increase, the number being 2,730; but this, as Mr. Koren has suggested, was undoubtedly entirely due to the good and strenuous work done that summer by Mr. Charles H. Kip, of the Society for the Prevention of Cruelty to Children, in his crusade of fifty-one nights to prevent newspaper selling—with its incidental accompaniments of begging, gambling, and picking pockets—by small children in the streets at night. Two circumstances—(1) that the increase is practically confined to the ages from eight to fourteen, inclusive, and (2) that the number of those giving their age as fourteen years increased 99, as compared with the previous year, while those giving their age as thirteen increased only 14—tend to substantiate this conclusion, fourteen being the age after which newsboys were then allowed to be out after eight o'clock. It is satisfactory to have from so careful a statistician as Mr. Koren a statement that "beyond such sporadic efforts there have been no changes in police methods, nor any

other circumstances which tend to nullify the cheerful inferences to be made from this table."

Forty-two per cent. of the arrests in 1901 were of children of school age,—that is to say, under fourteen; and only 116 out of the 2,730 were girls. Mr. Koren points out that in the case of children under twelve "arrest" does not in most cases mean an actual arrest, but usually only a summons to appear in court, and that children under twelve held for trial must not be locked up, while but few, even over that age, are so in practice, the parents' recognizance usually being deemed sufficient.

The offences for which the arrests were made in 1900–01 (Table 2) varied from throwing snow-balls to manslaughter, 25 per cent. being for the sort of offence (like trespassing, stealing rides on frieght cars, playing ball in the streets) that may mean thoughtlessness, or merely that one is a boy, rather than having any criminal significance. "Violating city ordinance," for instance, gave 17.52 per cent. of the cases. Mr. Koren is, however, careful to point out that some arrests for these minor offences are really arrests of criminal boys who were brought into court on smaller crimes than some of those they had actually committed. The offence of being a stubborn child, for instance, which was the cause of 5.91 per cent. of the arrests, is often the excuse for arresting a child who has been guilty of something much worse, especially in the case of girls. The sentence imposed on a girl is often to the Industrial School during minority, but being a "stubborn child" is chosen as the excuse in order to soften the court record against her. Larceny is the largest single item, covering 27.12 per cent. of all the cases. One would like to know how many cases of larcency were for stealing coal or lead pipe, or for similar offences on the same moral level as that occupied by stealing apples on the part of a country boy. The ages 12 and 14 give more arrests for this offence than 17; and 10, 11, and 13 stand almost as high as 17. Breaking and entering, however, which can seldom be a very mild offence, furnished 13.42 per cent. of the arrests; and here, as in the case of larceny (and also of other more serious crimes), boys of fourteen and under furnished a notably large percentage of the cases (41.69 per cent. for this offence). As regards the more important crimes there has been no perceptible change for better or worse during the past ten years. The arrests for drunkenness show a falling off from 143 in 1899–90 to 52 in 1900–01, presumably due to the good work of our police commission in enforcing the liquor laws.

As to the causes of the favorable showing, Mr. Koren says no attempt has been made to localize the juvenile offenders or to show their relation to the different nationalities. It may, however, be interesting to note that a study of this same subject made by the present writer in

1899, covering the ten preceding years, and accepted at that time for publication by the Bureau of Municipal Statistics, gave the same favorable showing as the present study by Mr. Koren, and contained also the following studies:—

1. It showed that the proportional falling off in the number of arrests was in boys between 15 and 20 years old, there having been a great increase as regards those under 10, and a considerable increase for those between 10 and 15.

2. It included a study of arrests in certain police districts by classes of offences for every month from January, 1889, to December, 1898, inclusive, in order to determine whether North End Park or Charlesbank had produced results traceable in statistics. No conclusion, however, could be drawn, because, although there was a great falling off in the arrests in the neighborhood of those great play centres, a further study of

3. Juvenile crime by nationality in the city as a whole revealed the fact that the Jews, who had largely taken the place of the Irish in those districts, show a very much lower percentage of juvenile arrests than those whom they had thus displaced.

4. A study of arrests by ages and months for the ten years indicated that juvenile arrests were largely a question of weather, especially among the younger boys, a notable increase beginning in April and lasting through October, tending to show that law-breaking is largely a matter of sport rather than of business.

5. A careful inquiry made at the same time from the police captains elicited the opinions: *first*, that the Municipal Baths did have a great tendency to keep boys out of mischief; and, *second*, that the boys' clubs, especially those where dramatic entertainments were given by the boys themselves, had a marked tendency in the same direction.

Opinions since obtained from schoolmasters and other persons familiar with boys have been to the effect that a certain percentage (probably somewhere from 10 to 25 per cent.) of the newsboys get harm from their occupation, chiefly from the late hours and from having money that they cannot be obliged to account for. It is curious in this connection to notice that only 44 boys were arrested in 1900–01 for "gaming," as it is possible to see nearly that number gambling any night on which one cares to take the trouble to walk about a quarter of a mile in the vicinity of the theatres—Mason Street, in front of School Committee headquarters, being a favorite and appropriate resort.*

*This was true last winter and spring, but the police are now taking more interest in street boys.

The second part of Mr. Koren's study is a good deal more than a study in statistics: it is in fact a careful dissertation, by one thoroughly familiar with the subject, on the actual procedure of our courts in dealing with boys. We have juvenile sessions, although we have no special juvenile courts. The father or mother, or, in their absence, the person with whom the child resides, is sent for; and, if they are not forthcoming, the Court may appoint somebody else to take the child's part. If the Court thinks it may want to commit the child to the State Board of Charity it must notify the Board and let the Board's agent investigate beforehand.

In disposing of a case, the Court may hand the child over for minority to the State Board of Charity, which in its turn may keep the child or hand it on to one of the two State reform schools, for boys (if under 15) and girls (if under 17), respectively. Or the Court may put the child on probation; or impose a fine; or send him (if over 12) to a county prison or to a reform school for the non-payment of a fine; or send him to some penal institution direct. (In addition to the Lyman School, which is carried on by the State, Boston and Salem have each a reform school for boys.) Sometimes a case is continued to allow time to pay a fine.

"In Boston there are eight Municipal Courts, each of which has jurisdiction in the case of juvenile offenders in its own district. The State Board of Charity has agents who attend trials of juvenile offenders in these courts. Each court has a probation officer. In the Central Court there are several probation officers, including two for women and girls. In these courts, excepting the Central Municipal Court as hereafter explained, the probation officers take charge of juveniles as well as adults. Sometimes, especially in the Central Municipal Court, an agent of the State Board of Charity acts as surety. In such cases, however, in the Central Court, an agent of the societies mentioned below performs the work of supervision, as well as in cases in which they are sureties." In the Central Court the Boston Children's Aid Society and the St. Vincent de Paul have each an agent; and the Court frequently turns children over to these agents to be looked after, making the same use of them that it might make of its own probation officer, the case being continued to a certain day meanwhile. When the day comes, it is very seldom found necessary to sentence the child, the friendly visitation and restraint on the part of the agents of these societies being in almost all cases efficacious, and being a beginning of a friendly relation which often lasts for years. The same societies send their agents to the seven other Municipal Courts, when sent for.

The most common dispositions of cases in the lower courts in Boston (all below the Superior Court) are as follows: fined, 36.43 per cent.;

probation, 15.68 per cent.; on file, 15 per cent.; to penal institutions, 10 per cent.

It will be seen that the most frequent sentence is the fine, which, as Mr. Koren points out, seems appropriate where mischief rather than crime is being punished, although less desirable when the offence has been a really criminal one, or where the non-payment of the fine results in an inappropriate imprisonment, not for committing an offence, but for having parents unwilling to pay the penalty. Fines, in the Central Court, are often merely nominal (58 were one cent and 98 one dollar, out of 766 cases).

Placing on file, which is resorted to in 15 per cent. of the cases, and amounts to practically doing nothing about the matter, seems to be used in some courts as a substitute for probation, but is entirely lacking in "the element of custodial supervision, which is the essence of the latter method." About 10 per cent. were sentenced to correctional institutions (exclusive of the parental school, which is the Boston Truant School), the different courts varying very much in this respect. It is especially interesting in this connection that almost all the cases appealed to the Superior Court received sentences much lighter than those appealed from, the greater use of probation by the higher court being especially notable. "Presumably all the cases were duly investigated by probation officers of the respective lower courts, who found that they could not recommend the clemency of probation. In the Superior Court, however, 52 per cent. of these boys were taken on probation, or almost the same number who had originally been sentenced to institutions. In every instance the boys who had been sentenced to the Lyman School, the House of Reformation, the House of Correction, and the Massachusetts Reformaory,—in all about 48 per cent. of the whole number who had appealed,—escaped with probation or had their cases placed on file. The seven candidates for the Massachusetts Reformatory were reduced to four."

JOSEPH LEE.

ATLAS OF INSURANCE.

Assecuranz-Atlas. Atlas des Assurances. (A presentation by statistics and graphics of the growth of the different forms of insurance in the various states, 1855–95. By Emil Stefan. French text by Al. Stefan. Printed and published by G. Freytag & Berndt, Vienna, 1901.)

The difficulty of compiling approximately accurate and complete insurance statistics for a series of years for even a single country will be appreciated by any one who has ever essayed the task. The compilation

of accurate statistics of the various forms of insurance for all the countries in which insurances are effected may safely be said to be an impossible undertaking in the present condition of insurance records. Failure to accomplish the impossible is not a crime, and the author of the present work may be pardoned if he has fallen short in a task too big to achieve. He does not claim for his work completeness or perfection, but expresses the hope that with all its imperfections it may point the way to the publication of universal statistics of insurance and upon a wider basis than that presented in this preliminary Atlas. The careful reader will find that in some respects the author of this Atlas has fallen short of the easily possible in his self-imposed task. Writing from Austria, he seems to have labored under many difficulties, not the least of which was lack of reliable sources; and these hindrances have apparently increased directly as the distances of the countries observed from the point of observation of the writer.

At the beginning of the Atlas is given a list of the "oldest and largest" insurance companies. These are arranged alphabetically by countries. All kinds of insurance companies are here thrown indiscriminately together. From the list of insurance companies in the United States, no less than thirty regular life insurance companies doing business in 1895 are omitted. Size or age could not have been an excuse for the omissions; for such companies as the Connecticut General (1865), John Hancock Mutual (1862), Massachusetts Mutual (1851), Michigan Mutual (1867), Mutual Benefit (1845), New England Mutual (1844), North-western Mutual (1858), Prudential (1875), State Mutual of Massachusetts (1845), and Travelers (1866) are among those omitted. The purpose that such an imperfect list can serve is, to say the least, conjectural.

The first part of the work gives a statistical résumé of the various forms of insurance in such countries as the author found it possible to secure statistics. In some countries only life insurance is considered; but, in general, statistics are given for life, fire, marine, plate glass, hail, accident, transport risks, cattle, and miscellaneous classes of insurance. Statistics are given, where possible, for each of the years in the period 1875–95, inclusive. The items considered are insurance in force, new business, premium income, and claim payments. The severest criticism which can be passed upon this part of the work is that the sources of information are not indicated; and, with few exceptions, no statements are made of the steps taken to secure complete statistics. For example, no statement is given of the sources from which the statistics of life insurance in the United States were taken. There is no complete agreement with any figures that the writer has seen, and the figures

given in the first table, page 46, are incomplete and in one respect misleading. The amount of life insurance in force with ordinary companies is given as less in 1894 and 1895 than in 1893. If the author had availed himself of the official statistics readily accessible in the annual reports of the New York Insurance Department or in the Spectator Year Book, he would not have made such an inexcusable blunder; nor would he have found a statistical basis for the false inference that the decline in the amount of insurance in force in the United States in 1894 and 1895, as compared with 1893, was due to an excessively high lapse rate.

The following statement shows the amount of life insurance in force with Ordinary Legal-Reserve companies in the United States during the period 1890–95:—

AMOUNT OF ORDINARY LIFE INSURANCE IN FORCE IN THE UNITED STATES.

Years.	According to Stefan.	According to Hoffman.*
1890	$3,620,259,570	$3,620,057,439
1891	3,861,584,383	3,964,491,593
1892	4,897,731,350	4,314,204,343
1893	5,291,586,114	4,629,774,861
1894	4,669,721,114	4,765,220,494
1895	4,881,632,161	4,917,694,131

The insurance statistics of Australia and Japan are dismissed in a few lines, while China, India, South Africa, Canada, Mexico, Central America, and South America are not mentioned. No reference is made to the assessment and fraternal insurance in force in the United States, although the amount is very considerable. Complete statistics of these forms of insurance are not available, but any thorough study of insurance statistics must recognize these methods of insurance provision.

The graphics illustrating the various tables form the second part of the Atlas. Of these there are one hundred and sixty-one diagrams and three maps. The maps illustrate the amounts of insurance in force in the various countries of the earth at three periods, 1855, 1875, and 1895.

In general the diagrams are well constructed, and serve the intended purpose of enabling the reader to comprehend the growth of insurance in the various countries more readily than by inspection of the tables. Exception may be taken to the form of some of the diagrams, notably No. 99. where varying amounts of losses paid are represented by horns

*Statistical Abstract of the United States, 1902, p. 429.

of varying size, from which have poured heaps of coins, also of varying size. Diagrams of this sort make pretty pictures, but are bad graphics in a scientific work. "The test of all diagrams is that the diagram as drawn should afford the best view of the series, or groups of figures, that the eye can appreciate." A few of the diagrams in the work before us fail to meet this test; but, as before stated, the most of them are well constructed.

In conclusion it may be said that the Atlas is a perfect specimen of the printer's art. The printing is excellent throughout, and the reproduction of the color diagrams is perfectly done.

F. S. CRUM.

A MORTALITY INVESTIGATION.

This great undertaking of the Actuarial Society of America, now fully completed, was a specialized investigation. The society concluded that for the present the existing mortality tables were quite satisfactory indices of the general rate of mortality among insured lives, and that—in the language of Mr. Emory McClintock—"it is now more desirable to learn how fishermen compare with farmers, how physicians compare with clergymen and the like, than it is to gather all these heterogeneous classes into one grand average in the form of a new life table." In October, 1900, the society appointed a committee of five, with Mr. McClintock as chairman, to consider the practicability of undertaking an examination of the mortality experience among different classes of insured lives. In May, 1901, after many sessions, the committee reported unanimously in favor of investigating certain classes ot risks, of which they submitted a schedule. The committee's recommendations were adopted unanimously, and they were requested to take charge of the work. They immediately sent the companies blank forms upon which to report the needed data, with full directions as to the method of reporting. Somewhat later Mr. John K. Gore, actuary of the Prudential Insurance Company, was added to the committee, and put in charge of the practical work.

To give in detail a full description of all the ninety-eight classifications would occupy many pages, so only a general sketch can be given. Three classes have reference to the amount of the policy or the plan on which it was issued. There are four classifications with regard to race: thirty-five with regard to occupation; fourteen classes have reference to the weight combined with what is known as the "Family Record" of the insured; two classes refer to height alone, and two to family record alone; and twenty-two classes refer to residence only.

The committee decided not to consider any insurances issued before 1870, as the volume of business prior to that date was very small. The data furnished by the companies end with the issue of 1899, so that exactly thirty years' issues will be reported. About one-half of the policies issued will not fall under any of the classifications, though in some few cases one policy will fall into as many as five or six classes. A separate card is used for each policy in each classification under which it is included. About three millions of cards have been used in the tabulations.

A brief sketch of some of the classifications may properly be given here:—

1. $20,000 or more insurance granted at same time in a single company.
2. Policy issued for an amount less than requested.
3. Policy issued on a plan different from that requested.
4. Born in Germany.
5. Born in Ireland.
6. Born in Sweden or Norway.
7. Colored.

8 to 42. Various occupations.

43 to 58. "Personal Record":

thus 43. Insured has intermittent or irregular pulse;

and 44. Insured has pulse below 60.

59 to 72. Weight combined with Family Record:

thus 59. Weight say over 200 lbs., with height 5 ft. 10, and neither parent noted as dead at an age under 70.

73. Height above 6 ft. 3 inches.
74. Height below 5 ft.
75. Parent, brother, or sister, died of cancer.
76. Parent, brother, or sister, has been insane.

77 to 98. Residences by counties: with two exceptions these are all counties in Southern States, containing cities where considerable numbers of persons have been insured. The exceptions are Arapahoe County, Colorado, in which Denver is located, and Santa Fé County, New Mexico.

The sorting of the cards for the computation of the statistics has been done by a machine invented by Mr. John K. Gore, actuary of the Prudential Insurance Company. Each card is punched with holes indicating by their positions the class to which the policy belonged, the age at issue, the duration of experience, etc. The machine automatically picks out each card belonging to each class, then sorts them according to age, then according to duration, etc., as may be desired.

Those who may desire a fuller description of the work may obtain more extended details from a fully illustrated article by the writer in the *Journal of the [British] Institute of Actuaries*, April, 1902.

The preparation of the data was begun in May, 1901, and finished shortly after the middle of 1902. The committee had hoped to be able to complete their investigation early this year and present the results to the Actuarial Society at its annual meeting in May, 1903; but the work proved too vast for completion by that time. Their report was published in August, 1903, and presented at the International Congress of Actuaries, at which Secretary Cortelyou presided, New York, September, 1903. Copies of the full report (price $6) or of the summary ($2) may be obtained from John Tatlock, Secretary, A. S. A., 32 Nassau Street, New York,

DAVID PARKS FACKLER.

MERCANTILE WAGES AND SALARIES.

The Massachusetts Bureau of Statistics of Labor has recently opened up a new line of investigation, an inquiry into the wages and salaries of persons engaged in mercantile employment. The results of the first investigation of this sort have recently been published as Part III. of the Bureau's Report for 1902.

The inquiry covers only the congested business section of Boston between Cornhill and Boylston and Washington and Tremont Streets. 455 establishments were visited, and are classified into "individuals," "firms," and "corporations." This classification runs all through the tables in an evident effort to trace some connection between wages and the form of organization of the establishment. No such connection appears. The 455 establishments cover nearly every kind of retail business in the city, jewelry and silverware leading the list with 33, men's clothing second with 32, boots and shoes, men's furnishings, and liquors 28 each, millinery 24, etc. There are 16 dry-goods stores, but only 3 department stores are represented; these 3 employed 2,373 persons, or 25.1 per cent. of the 9,454 falling under the investigation. 54.2 per cent. of the total number were males, 45.8 females.

The first wage table given is that of "Graded Weekly Wages and Salaries" by sex, kind of business, branch of occupation (book-keeper, buyer, errand boy, etc.), and form of organization. Wages are here classified into the familiar high, medium high, medium, medium low, and low,—a classification dependent largely on the subjective estimation of the enumerator, and of incomparably less value than would be a

classification into definite wage groups. The Report defends the system by remarking, "It is distinctive in that for each occupation it shows not only the high and low wages, but the intermediate rates which must necessarily be considered if we would arrive at reliable conclusions relative to the wage question." True, so far as it goes; but we need also to know the actual or relative numbers receiving the "high," the "medium high," or the "low" wages, respectively.

The next table considers "Average Weekly Wages and Salaries" by sex, kind of business, and branch of occupation. Here, for instance, we find the average wage of male book-keepers in the carpet business to be $28, and of females $9.07. This sort of average is usable and not misleading, for it averages only closely similar quantities. This is the most valuable and interesting of the tables.

Two other tables give the branches of occupation represented in various wage groups, "$2, but under $3," etc., and compare the wages of males and females in the various occupations. It is a comment upon our ideas of commercial equity that in several cases the wages of women are less than one-half those of men doing apparently the same work. In 3 out of the 44 occupations here considered the wages of the two sexes are substantially the same, in 5 the wages of females exceed those of males by amounts ranging from $0.25 for floor girls to $7.65 for assistant buyers, while in the other 36 cases the wages of males are mostly from 25 per cent. to 50 per cent. above those of females. The highest salary is $81 a week for female buyers, $125 a week for male buyers and managers.

The Report will be found valuable to all students of wages and social conditions, and especially to those engaged in any local investigation of the city's population. If we can secure detailed and accurate statistics of local phenomena in place of or in addition to a great mass of general and often vague figures and "averages" for the whole state or nation, we are taking a much-needed step. In an attempt to investigate the housing condition of this very class of mercantile wage-earners the writer has encountered no more discouraging obstacle than the lack of detailed and refined city statistics.

A. B. W.

STATISTICS OF INSANITY.

In a pamphlet of fifteen pages, reprinted from the *Bulletin of Institutions of Iowa* for July, 1903, F. I. Herriott, professor of economics and political science at Drake University, publishes some notes on occupations, general health, and diseases in insanity. The immediate purpose of this study is to offer suggestions on the classification of statistical returns of institutions rather than final results of investigations. Efforts of this kind are always welcome. The statistical output of institutions, particularly as it relates to insanity, is notoriously chaotic and unsatisfactory. Perhaps it is inevitable that it should remain so for some time to come, at least in certain respects. The old nomenclature of mental diseases is undergoing a rapid and radical transformation, and until the alienists themselves agree upon terms and the meaning of terms it is rather hopeless for others to try to work out comprehensive schedules relating to such matters as physical condition and the causes of insanity.

Considering the inevitable limitations of a statistical investigation of insanity,—and Professor Herriott is fully alive to them,—the greatest value of his paper lies in the suggestions he makes for a more rational classification of occupations. As he points out, "there has not been any systematic attempt at a classification of occupations with a view to discovering the relative frequency of insanity within well-defined groups or classes of occupations."

For the purposes of his study he arranges occupations under ten general titles: agricultural and rural; commercial or mercantile; manufacturing and mechanical (with thirteen sub-groups); communication and transportation; professional; clerical; domestic and personal; public service; non-industrial; and no occupation, the last group comprehending "that varying and indeterminate class of men and women of leisure who appear in the returns of insanity."

Applied to persons engaged in gainful occupations in Iowa, this classification affords an exhibit quite different from that presented by the United States Census, and tends to disturb commonly accepted notions in regard to the character of the population in Iowa and its industrial pursuits. Thus it is found that but 47.1 per cent. of those engaged in gainful pursuits are busy in agriculture and rural occupations. When applied to the inmates of the insane hospital at Clarinda (the particular institution under study), the classification brings out other facts that "do not square with popular views and assumptions." For instance, the reverse of the oft-repeated claim that farmers' wives exceed all other

classes in the numbers that go insane is found to be true. Another unexpected fact is that 59.6 per cent. of the insanity in the Clarinda institution during a decade occurred among persons living in towns and cities and engaged in commercial and urban pursuits.

That part of Professor Herriott's paper which deals with the physical condition of the insane, causes of insanity and of death of the insane, is not likely to meet with the unqualified approval of the alienists; for these gentlemen are far from agreeing among themselves. A satisfactory statistical treatment of these matters is exceedingly difficult, if not impossible, at the present time. But that should not deter one from attempts like Professor Herriott's. They at least help to pave the way for larger excursions into this difficult field.

JOHN KOREN.

A CITY FACTORY DISTRICT.

South End Factory Operatives: Employment and Residence. A monograph by Roswell F. Phelps, A.M. Published by the South End House Association, 20 Union Park, Boston.

This monograph is the result of an exhaustive investigation carried on by Mr. Phelps during a two years' residence in the South End House Settlement as a holder of the South End House Fellowship maintained by graduates of Harvard University living in Boston.

The field covered by this investigation is comparatively narrow, and the figures dealt with small; but, while this would naturally tend to detract from the reliability of averages and general inferences, it has had the compensating advantage of admitting of great accuracy in the data secured and of a searching and vital analysis of the results attained. The writer in his intercourse with the employers and employees of the district has learned much more than could possibly be conveyed by the statistics which he has thus been enabled to gather. The results of this close personal contact appear in the explanatory text, which gives evidence of a sympathetic understanding of social conditions often so utterly lacking in official statistical work.

The South End Factory district is a small area of made land in Ward IX., bordering on what is known as the South Bay. The writer gives a brief historical sketch of this section of Boston, and describes the various phases of its physical, social, and economic development and present condition. In this district are located 118 factories of various kinds, employing approximately 2,000 hands. It is these

2,000 laborers, or rather 1,102 of them whose addresses he was able to secure, that Mr. Phelps has made the special subject of his investigation. He ascertained by most careful inquiry the place of residence and the wages of all of these persons, visited many of them in their homes, and found out by consulting the assessors' books the amount and character of the property owned by a large number of them. From these and other data he has prepared maps and tables showing groupings of residences as regards distance from the factories. He found that the more poorly paid operatives, as a rule, lived within walking distance of the factories, that the more skilful and intelligent were able to take advantage of street-car facilities, and enjoy the better and more healthful residences available in the suburbs or remoter parts of the city. He made a special study of the transit problem by steam as well as electric cars, and sets forth the advantage that the elevated road, then just completed, affords this class of people.

As a result of this study, he concludes that all influences and opportunities which tend toward decentralization make for the best interest of this class of people. Philanthropy which builds sanitary and attractive tenement houses in congested districts is of doubtful expediency; but all efforts in the direction of overcoming "residential inertia" by affording cheap transportation and attractive surburban homes are, for Boston at least, steps in the right direction for the ultimate solution of a proper housing for the working class.

Whether we agree with Mr. Phelps in his conclusions or not, we cannot fail to recognize the merit of the contribution in the form of accurate and well-arranged data which he has made to the study of practical sociology.

C. W. Doten.